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M.A. OGUNU

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in Nigeria**

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**Positive Aspects of Students' Evaluation
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Internet Home Page : <http://www.nic.in/envfor/iifm/iifm.html>

Last date for receiving the completed application form is 31 March 1999.

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Editor :
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Development of University Education in Nigeria

M.A. Ogunu*

Introduction

A crucial problem facing educational planning in Nigeria is paucity of data. Accurate statistical data needed to assess the efficiency of our educational system and make realistic projections are not readily available. For effective academic planning for university education at national or state level, statistics on enrolment, graduate output, academic staff, and funding are essential building blocks. Knowing their past trends is a prerequisite to forecasting their future levels.

This article analyses trends in the above named variables in university education in Nigeria since 1948, with a brief description of the growth of universities in the country as background.

Growth

University education in Nigeria commenced with the establishment of the University College, Ibadan (UCI) in January, 1948 as a college of the metropolitan University of London. The University College became independent of London University in 1962 and became a full-fledged University of Ibadan (UI). The University is internationally famous for its academic excellence. As observed by Prof Jibril Aminu, a former Federal Minister of Education in Nigeria, "Ibadan can rightly claim by the high standards it so severely set earlier in its history, to have given credibility and international recognition to higher education in this country (Nigeria). No matter its present difficulties, that is a distinction that cannot be easily detracted from that institution (Lagos, Nigeria : National Universities Commission, 1983 20 years of University Education in Nigeria, P 25).

Following the Ashby Commission Report (Ashby, 1960) four universities were established between 1960 and 1962 in the following sequence :

1. The University of Nigeria, Nsukka — created by a Statute of the Government of the former Eastern Region in 1955 and opened in 1960;
2. The University of Ife, now Obafemi Awolowo University. The University was not recommended by Ashby. It was founded in 1961 by the Government of the former Western Region. It first enrolled students in 1962;
3. The Ahmadu Bello University, Zaria — founded in 1962 by the Government of the former Northern Region; and
4. The University of Lagos established in 1962 by the Federal Government.

In 1970, the Mid-West State (present Edo and Delta States) which was carved out of the Western Region established the Mid-West Institute of Technology (MIT). The Institute converted to a University sta-

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tus — the University of Benin — in 1972 and was handed over to the Federal Government in 1975.

The Third National Development Plan (1975-1980) made provisions for the establishment of seven more universities to be located in states where there were none at that time. This gave birth to the 'Seven Sisters' or Second Generation Universities in 1975. The universities were established as follows :

1. The University of Calabar, which began as the Calabar Campus of the University of Nigeria in 1973.
2. The University of Jos, founded as a campus of the University of Ibadan in 1971.
3. The University of Maiduguri, 1975.
4. The University of Sokoto, 1975.
5. The University of Ilorin, which was a former campus of the University of Ibadan but became a full university in 1977 after becoming a University College in 1975.
6. University of Port Harcourt which took off initially as a University College in 1975 and affiliated to the University of Lagos. It became a full-fledged university in 1977
7. Bayero University, Kano, which started as Northern Government owned Abdullahi Bayero College in 1961, became Bayero University College of Ahmadu Bello University in 1962, and a full university on 1st October, 1977.

The 1979 Constitution of the Federal Republic of Nigeria placed university education on the Concurrent Legislative List. That meant that, apart from the Federal Government, State Governments who wished could establish their own universities as was the practice before 1975 when university education was put on the Exclusive Legislative List by the then Military Government

Between 1979 and 1983, the following eight State Universities were established :

Bendel State University, Ekpoma, 1980

Anambra State University of Technology, Enugu, 1980

Imo State University, Okigwe, 1981

Rivers State University of Science and Technology, Port Harcourt, 1981

Ondo State University, Ado-Ekiti, 1982

Ogun State University, Ago-Iwoye, 1982

Lagos State University, Badagry, 1983, and

Cross River State University, Uyo, 1984.

In 1988 the Federal Government announced the establishment of the University of Abuja. Other Federal Universities established since then are :

1. Tafawa Balewa University, Bauchi
2. Federal University of Technology, Akure
3. University of Agriculture, Makurdi
4. University of Agriculture, Abeokuta
5. Federal University of Technology, Yola
6. Federal University of Technology, Minna
7. Federal University of Technology, Owerri.

The University of Abuja was established in 1988 while the Nigeria Defence Academy was granted university status. It awards degrees but it is only open to Military personnel. In 1990 Oyo State University was established at Ogbomosho, and in the following year, 1991, Nnamdi Azikiwe University, Awka was established. Later the number of states increased from 21 to 30, further supurring on the demand for new universities — to fulfil federal government commitment to provide each state with a university and to allow any state that wished to open its own university to do so. As at 1994 there were about 42 universities in the country

It can be seen from the foregoing that the period between 1980 and 1994 witnessed remarkable expansion of higher education in Nigeria. From six universities in 1975, the number of universities in Nigeria rose to 42 by 1994, that is 36 new universities within the space of nineteen years

Student Enrolment

In 1960 there were 1,399 students in Nigeria's two universities (Ibadan and Nsukka), in 1961 the number rose to 2,406 (*Adesina*, 1977, p. 182). In the 1962/63 academic session, the total university enrolment stood at 3,646. This increased during the Nigerian civil war between 1967 and 1970 (National Universities Commission, 1988, *25 Years of Centralised University Education in Nigeria*, Lagos NUC p. 141).

The set-back was temporary as enrolment doubled every four or five years during the period 1970 and 1985 (Table 1).

Table 1: Nigerian Universities — Total Enrolment, Output of Staff 1962/63 — 1985/86

Year	Total Enrolment	Academic Staff	Total Output
1962/63	3,646	680	452*
1963/64	5,106	670	860
1964/65	6,707	1,079	1,341

1965/66	7,709	1,208	1,525
1966/67	8,888	1,366	1,264
1967/68	7,058	1,148	1,293
1968/69	8,588	1,288	1,638
1969/70	9,695	1,475	2,175
1970/71	14,468	2,272	3,106
1971/72	17,093	2,245	3,794
1972/73	20,889	2,655	3,915
1973/74	23,228	3,457	4,493
1974/75	26,448	3,584	4,474
1975/76	32,286	4,055	4,780
1976/77	40,914	5,058	8,169
1977/78	46,684	5,190	9,578
1978/79	48,698	5,506	12,463
1979/80	57,742	5,840	13,562
1980/81	77,791	6,666	13,880
1981/82	90,751	8,470	15,715
1982/83	104,774	8,736	21,447
1983/84	116,822	9,457	25,822
1984/85	126,285	10,038	27,550
1985/86	135,783	11,016	30,065

*Excludes UNN.

Source : National Universities Commission (Nigeria): *25 Years of Centralised University Education in Nigeria*, p. 141

In the 1985/86 academic session, there were 1,35,783 students in Nigerian universities, with the state-owned universities accounting for 21,059 or about 15.5 per cent.

Education, as a discipline, seemed to be the most popular as more than 17 per cent of the student population were undergoing courses in it during the academic session (1985/86). In other words, one out of every six students in the universities was pursuing courses in Education. Arts, Social Sciences, and Natural & Applied Sciences each accounted for about 13 per cent. There has been in existence a national policy on enrolment which stipulates a 60:40 ratio in favour of science-based disciplines. It has not been possible to achieve this ratio over the years. However, the actual enrolment ratio which stood at 51:49 for three consecutive years improved slightly to 52:48 in the 1985/86 academic session (*Ibid.*). Corresponding figures for the 1963/64 and 1964/65 sessions were 43:57 and 41:59 respectively, thus indicating that a great deal of efforts had been made towards the achievement of this goal (*Ibid.*).

Enrolment for postgraduate studies has consistently been on the increase, both in absolute terms and relative to total student population. From a low figure of 192 in 1965/66 to 9,923 in the 1985/86 academic session, postgraduate enrolment as a percentage of total student population increased by nearly 5

percentage points, from 2.6 per cent in 1965/66 to 7.3 per cent in 1985/86 (NUC, *25 Years of Centralised University Education in Nigeria*, *op.cit.*, p. 142).

The proportion of the total students pursuing undergraduate courses declined substantially from more than 90 per cent in 1965/66 to 79 per cent in the 1985/86 session. In absolute terms, however, undergraduate enrolment was in 1985/86 over 14 times the level attained in 1965/66, having increased from 7,299 to 1,07,204 during this period (*Ibid.*).

An additional development over this period was the appreciative growth in female enrolment. The proportion of female students in the university system rose from 9 per cent in 1964/65 to 24 per cent in 1985/86 academic session, as female enrolment rose from 601 to 32,540 during the period. In other words, between 1964 and 1985, female enrolment increased on an average of 20.9 per cent annually (*Ibid.*). Male enrolment declined by 15 percentage points, from 91 per cent to 76 per cent in 1985 (*Ibid.*).

The total student population in the Federal Universities was projected to be 1,41,400 by 1990/91, when it was expected that the much desired 60:40 Sciences-Arts enrolment mix would be achieved (*Ibid.*).

Graduate Output

With increased enrolment, the graduate outputs have also been rising. The university system produced a total of about 2,13,334 graduates in the period between 1963 and 1986 (Table 1). The figure includes sub-degree, undergraduate and postgraduate degree certificates/diplomas awarded during the period. The output by level of study is as shown in Table 2.

Table 2 : Nigerian Universities — Graduate Output by Level of Course

Year	Sub-Degree	Under-graduate	Post-graduate	Total
1965/66	163	1,275	87	1,525
1970/71	406	2,523	177	3,106
1975/76	804	5,160	471	6,441
1980/81	2,816	9,662	1,402	13,880
1984-85	4,017	20,236	3,297	27,550

Trends in graduate output are generally affected by earlier changes in the composition of enrolment. Enrolment is on the increase and so also is the output, with the latter doubling four or five years between 1965 and 1985. The production of the output

with postgraduate qualifications is also on the increase, attaining a level of 12 per cent in 1985 (NUC, 25 Years....., *op. cit.*, p.146).

The number of students that graduated from the Nigerian universities in 1986/87 session was 30,935 (National Universities Commission (1987), *Annual Report — January 1987 to December, 1987*. Lagos : NUC, p. 19). Out of this number, the Federal Universities accounted for 26,737 students or 86.4 per cent, the affiliated colleges with 710 students or 2.3 per cent while the State Universities accounted for 3,488 students or 11.3 per cent (*Ibid*). The ratio of degree to non-degree graduates stood at 86.8:13.2 while that of first degree to postgraduate degree output was 72.5:14.3 (*Ibid*). There was no remarkable improvement in the ratio of science to arts graduates. The ratio which stood at 42:58 in the 1982/83 and 1983/84 academic sessions changed to 45:55 in the 1984/85 and 1986/87 academic sessions (*Ibid*). This is however far from the standard ratio of 60:40 in favour of science-based disciplines.

Academic Staff

The number of academic staff normally follows enrolment trends. In the Nigerian university system, the number of academic staff increased rapidly between 1963 and 1966, and after the civil war. The total number which stood at 680 in 1962/63 increased to about 11,000 in the 1985/86 academic session, representing an average annual growth rate of about 12.9 per cent (Table 1).

The overall student-teacher ratio which stood at 5.4 to 1 in 1962/63 rose rapidly to about 12.3 to 1 in 1985/86 (NUC, 25 Years . , *op. cit.*, p. 145).

As the total number of academic staff increased with student enrolment, the proportion constituted by professors declined substantially, from 20.2 per cent in 1962/63 to 12.5 per cent in 1970/71 session (*ibid*). Similar figures for the senior lecturers were 23.5 per cent and 12.9 per cent respectively for 1962/63 and 1970/71 (*ibid*). This indicates that the growth in staff strength occurred mainly in the lectureship grades (Table 3).

Table 3 : Nigerian Universities — Academic Staff by Grade

Year	Professors and Readers	Senior Lecturers	Others	Total
1962/63	137 (20.2%)	160 (23.5%)	383 (56.3%)	680 (100%)
1965/66	186 (15.4%)	177 (14.7%)	845 (69.9%)	1208
1970/71	281 (12.5%)	290 (12.9%)	1684 (74.6%)	2255
1975/76	512 (21.6%)	775 (19.1%)	2768 (68.3%)	4055

1980/81	1012 (15.2%)	1611 (24.2%)	4043 (60.6%)	6666
1985/86	1547 (14.0%)	2399 (21.8%)	7070 (64.2%)	11016

Source . National Universities Commission (1988) · 25 Years of Centralised University Education in Nigeria, Lagos N.U.C., p 146.

Between 1970 and 1980, the proportion in the senior categories (professors and senior lecturers) increased. With the creation of more universities (both Federal and State) however, the trend was reversed and only one out of every seven academic staff was in the professorial grades in 1985/86 as against one out of five in 1962/63 (*Ibid*). It is expected that the proportion in the professorial grades will increase as the new universities develop and the staff get promoted. It is however noteworthy that the university system has not achieved the NUC stipulation that 20 per cent of academic staff should be in the professorial grades.

In 1965/66 only 46 per cent of the academic staff in all Nigerian universities were Nigerians (*Ibid*). Twenty years later, there was an increase of 40 percentage points as Nigerians constituted 86 per cent of the total academic staff in 1985/86 (Table 4).

Table 4 : Nigerian Universities — Academic Staff by Nationality

Year	Nigerian	Non-Nigerian	Total	% Nigerian
1965/66	560	648	1,208	46.4
1970/71	1,603	652	2,255	71.1
1975/76	3,113	942	4,055	76.8
1980/81	5,118	1,548	6,666	76.8
1985/86	9,507	1,509	11,016	86.3

Source National Universities Commission (Nigeria). 25 Years of Centralised University Education in Nigeria, Lagos N.U.C., p. 146

The 1509 non-Nigerian academic staff left in the system in 1985/86 were made up of 310 professors, 538 senior lecturers and 661 others (*Ibid*).

In the 1986/87 academic session, the Nigerian universities had a total of 11,122 academic staff comprising various grades distributed among the Disciplines (NUC, *Annual Report — January 1987 to December, 1987*, p. 19).

The Federal Universities alone accounted for 9,103 academic staff or 81.8 per cent, the affiliated colleges accounted for 306 academic staff or 2.8 per cent while the State Universities accounted for the remaining 1,713 academic staff or 15.4 per cent of the total academic staff in the entire university system.

The academic staff strength in the Nigerian universities rose from 10,977 in 1985/86 session to 11,122 in 1986/87 session (*Ibid*). (*Ciroma*, 1983).

Funding

Between 1960 and 1969 the Universities of Ibadan and Lagos which were Federal institutions received 100% subsidies from the Federal Government of Nigeria. The three Regional Universities were financed partly by their respective Regional or State Governments and partly by the Federal Government. Other sources of funds for all the universities were occasional foundation grants for research, building etc, individual donations, students' fees, endowment and interest (*Fafunwa*, 1971, p. 221).

In an attempt to rationalize the financing of the five universities, the National Universities Commission set up in 1962 proposed that the Federal Government should be responsible for 50 per cent of the total recurrent and capital expenditure of the three Regional Universities while the Universities of Ibadan, Lagos, being Federal institutions should receive 100 per cent subsidies (*Fafunwa*, 1971, p. 223). The Federal Government accepted the funding of Ibadan and Lagos at 100 per cent but rejected the recommendations relating to the three Regional Universities. Instead it agreed to finance 30 per cent of the recurrent and capital expenditure of the University of Nigeria, Nsukka, and the University of Ife and to assume 50 per cent financial responsibility for Ahmadu Bello (*Ibid*). The NUC executed this decision between 1964 and 1966.

In 1967 the Federal Military Government further amended the previous Federal Government's decision as shown in Table 5.

Table 5 : Government Financial Support to Universities from 1967

University	Federal	Regional or State	Total
University of Ibadan	100%	0	100%
University of Lagos	100%	0	100%
University of Nigeria	30%	70%	100%
University of Ife	30%	70%	100%
Ahmadu Bello University	75%	25%	100%

Source *Fafunwa, A B (1971), A History of Nigerian Higher Education*, Macmillan & Co (Nigeria) Ltd., p. 224

Table 6 shows the recurrent grants actually paid to the Universities by the NUC from 1963/64 to 1968/69 sessions.

Before 1975, the funding of university education was shared almost equally between the Federal and State Governments of the Federation. After 1975 and with the take over of university education by the Federal Government, the Government became the sole financier of the universities. Since then there has been a downward trend in the funding of universities in the country. The sharp deterioration started from about the 1976/77 session owing to the increased commitments of the Federal Government's take over of all universities, abolition of tuition fees and pegging of boarding and lodging charges. Further attenu-

Table 6 : Recurrent Grants Actually Paid to the Universities by the N.U.C. : 1963-64 to 1968-69

University	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	Total
University of Ibadan	£1,525,000	£1,900,000	£2,000,000	£2,250,000	£2,306,700	£2,301,000	£12,282,700
University of Lagos	430,000	910,500	900,000	920,000	988,020	2,102,000	6,241,520
Ahmadu Bello University	210,000	450,000	500,000	550,000	540,400	1,140,000	3,404,400
University of Ife	195,000	218,000	210,000	250,000	253,440	357,000	1,483,440
University of Nigeria Nsukka	200,000	388,000	485,000	500,000	0	0	1,573,000
Total	£2,560,000	£3,857,500	£4,095,000	£4,470,000	£4,102,560	£5,900,000	£24,985,060

Before 1963 the universities' affairs were conducted by the Federal Ministry of Education.

Source *Fafunwa, A B (1971), A History of Nigerian Higher Education*, Macmillan & Co (Nigeria) Ltd., p. 225.

ation of Government grants brought with it greater deterioration in the year 1977/78 and even more so in the 1978/79 fiscal year. There was an accelerated rise in Government grants to the universities from N (Naira) 22 million in 1971/72 to N 185 million in 1977/78 (NUC, *20 Years of University Education in Nigeria*, op. cit., p. 40). The shortfalls (difference between NUC recommendations and actual government grant) have been increasing from N 24 million in 1977/78 (*Ibid*). This is shown in Table 7 where the trend to 1978 is analysed.

The local income of the universities (which includes fees and charges) dropped from N 10.4 million in 1976/77 to N 4.7 million in 1977/78 as a result of the abolition of tuition fees and the pegging of boarding and lodging charges (*Ibid*).

In 1978/79, Government grants dropped to N 148.9 million while the estimated local income increased to N 22.9 million. The shortfall inspite of this was still N 22.9 million (*ibid*).

In 1980, 1991 and 1992, the Federal grants to the universities for capital and recurrent expenditure were respectively N 171 million and N 203.85 million, N 335 million and N 300 million : and N 199.575 million and N 345.4 million (*Ibid*). For 1983 the approved grants were N 171 million for capital and N 374 million for recurrent, after Cookey (*ibid*) Table 8 shows the subventions to the Federal Universities for capital and recurrent grants from 1979 to 1985.

Table 8 : Subventions to Federal Universities (Naira)

	Capital	Recurrent
1979/80	N 150,000,000	N 200,000,000
*1980	N 183,879,000	N 261,381,000
1981	N 382,218,725	N 320,000,000
1982	N 199,575,000	N 334,000,000
1983	N 40,600,000	N 433,380,000

1984	N 45,549,881	N 433,380,480
1985	N 150,000,000**	N 443,810,630

* Subvention for nine months (April-December 31)

** N 100m was allocated once and for all, for rehabilitation only

Source: Adamu, Mahdi (ed.) (1989), *University Education Its Standard and Relevance to the Nigerian Community*, p. 49.

Though the recurrent grant has risen from N 200 million in 1979 to over N 440 million in 1986, the effective purchasing power has diminished rapidly over the years because of inflation. Whereas subvention had gone up by just over 100 per cent between 1979 and 1986, for the same period prices of goods had gone up by 200-1000 per cent (Adamu, 1989, op. cit., p. 48).

Unlike recurrent subvention that has been increasing steadily since 1979, the capital subvention to the Federal Universities rose from N 150 million in 1979 to N 382 million in 1981 and then dropped to N 119 million in 1983 (Adamu, 1989, op. cit., p. 50) Then there was a very sharp drop to N 40.6 million in 1984, rising to N 45.5 million in 1985 and N 50 million in 1986 plus N 100 million which is once and for all, for rehabilitation only (*Ibid*).

The Federal Universities have been under a state of financial emergency since 1984. Physical developments have slowed down considerably, even in the new universities that need to develop quickly to their minimum operational level of about 1,500 students, and many projects have been stalled and have remained incomplete

Conclusion and Recommendations

This article has analysed trends in the development of university education in Nigeria since 1948 for four variables — enrolment, graduate output, academic staff, and funding. The analysis has revealed that inexorable expansion has been one of the

Table 7 : Nigerian Universities Finance (Recurrent) (N Million)

	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78
NUC Recommended Expenditure	34.3	54.8	76.8	115.9	161.7	186.8	204.5
Total Universities Income	38.1	50.6	74.5	105.9	149.3	168.8	180.3
Shortfall (Surplus)	3.8	4.2	23	10.0	12.4	18.0	24.2

Source: Ukeje, B.O. et al (eds.) (1986), *Issues and Concerns in Educational Administration — The Nigerian Case in International Perspective*. Macmillan Nigeria Publishers Ltd., p. 108

most remarkable features of university education in the country during the period under review.

Secondly, although the absolute amounts of grants to the universities have been rising the shortfalls, as defined above, have been rising even faster. The universities are becoming increasingly poorer financially.

It is therefore necessary to pull the brakes to university proliferation. Consolidation should be the keyword between now and the year 2000, and a rigorous attempt made to sanguinate the ailing corpus of the older institutions and put flesh on the frame of the newer ones.

To continue to develop or operate at the desired quality level the universities must seek alternative means of financing since government grants cannot be sustained at the desired level.

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Adhoc Lecturers in Colleges

J.N. Kapur*

The Problem

There is a general feeling that after independence, higher education has received an unduly large share in the educational cake of the country at the cost of primary education. It has now been decided that funds for higher education should be cut and those for primary education be correspondingly increased. Alternatively, it has been proposed that the funds for higher education should be frozen at the present levels so that funds for increase in expenditure in higher education due to increase in the number of students, starting of new courses and even normal increases due to increase in salaries and dearness allowances etc should be earned by higher education institutions themselves. At the same time, larger funds are being provided for primary education. The funds provided for mid-day meals in primary schools are 4 or 5 times the funds provided by the central government for all the central universities and all research in the higher education system.

Since most of the expenditure on higher education is under the head, salaries, the following decisions have been taken consciously or unconsciously.

1. Whenever posts fall vacant by retirement of teachers or otherwise, the posts should not be filled up as far as possible and to meet the demands for teaching, the colleges may appoint adhoc lecturers and pay them on an adhoc basis;
2. Whenever new courses are sanctioned, these are allowed subject to no additional financial commitment by the government. The colleges are forced to get teachers from their own institution or from others and pay them on a per lecture basis;
3. When new courses in management, computer science, medicine etc are started, they are to be in the private sector where large fees can be charged. These courses are supposed to be self-financing. However no strict control is exercised and the private sector is allowed to make huge profits from the education system, and
4. The upper limit on the number of students in a class is relaxed and students' attendance in classes is not insisted upon, so that the ratio of

teachers to students goes on decreasing.

The Appointment of Adhoc Lecturers

These appointments are in the hands of college management and in the absence of university and government control and due to low salaries offered, only poorly qualified faculty members are appointed. In fact the emoluments paid to adhoc lecturers in a year may be of the order of 25% of the normal lecturers. Moreover these lecturers are quite over-worked, so that they teach even those classes which should have been taught by regular lecturers and the sufferers are the students. But who cares for them?

Why do these adhoc lecturers accept low salaries? There are many reasons

1. They are not qualified enough to get regular jobs on a regular basis;
2. They enter the private tuitions market and they make more money through private tuitions than they get from the colleges. If they are not adhoc lecturers, they may not get these tuitions also; and
3. They always hope that some day some government will regularise them on compassionate grounds.

This policy suits everybody. It suits the government because it saves a lot of money. It suits members of the college management because they can oblige a number of friends. It suits those so appointed because they may not have got appointed otherwise. It may appear not suitable for students who get inferior education; but do students really care for the lectures in the colleges? Quite often they depend on help books, guides and private tutors and copying to pass in the examinations.

Scenario Abroad

There is a resource crunch in higher education in all countries of the world, and even there, there is a great tendency to appoint adhoc lecturers; but there is resistance to this policy. In fact the teaching community boycotts such institutions which adopt this policy on a significant scale.

This is also what happens in most trade unions which always resist appointments of persons at lower salaries because they believe that if this practice continues, every employer will find ways of reducing their salaries.

In our case our teachers' associations have not protested against this practice because here services

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of teachers are in general more secure than in other countries. The government will not allow anybody to be fired even if he does not teach a single class. Even if the government agrees, the courts will not permit this. The grades are also fixed and everybody is automatically entitled to get his increment independently of the quality of the work he does.

In other countries when the government cuts the university budget, the salary budget, the library budget, the laboratory budget are cut down in the same ratio. In our country salary budgets are not touched but all other budgets are cut down drastically. In fact salaries are paid sometimes out of the grants meant for research or for maintenance of buildings.

Another reason is that there everybody is concerned about the quality of education. Here nobody seems to be worried about it. The standards are already low and there is a general feeling that they cannot be lowered further. There the teachers are very conscious about these standards and they themselves insist that other budgets should not be cut down because these lead to lowering of quality of education.

A Recent Case Study

A college recently applied to a government for starting an M.Sc. course in a subject for which there was a great demand. The permission was granted only after some money was paid to the officers of the department concerned and then the government made no financial commitment for running the courses, nor did it give any funds for the laboratory equipment or for library books. The fees were also not allowed to be increased. This naturally led to all sorts of corrupt practices and a very low quality of education, but the students still managed to get their degrees in a subject they wanted. Nobody was concerned about the worth of these degrees.

An Ingenious Scheme

The colleges found that they could not pay even the extremely low salaries of adhoc lecturers without any government assistance. As such a scheme was devised by which all students who were denied admission in the regular courses of the colleges on account of lack of merit, could be admitted to evening courses in the same colleges, but there the tuition fees were 20 times higher. The adhoc lecturers were appointed against the evening teaching positions, though the colleges used them for teaching both morning and evening classes. The emoluments for them continued to be 25 per cent of what these were for the regular teachers.

This scheme served two purposes. Now everybody could get admission to colleges so long as he

could pass the earlier qualifying examination and at the same time, it improved the financial position of the colleges to some extent. However, it also implied that substandard students were to be taught by substandard teachers and quality of education could go down further but again, who cares for the quality of education? We must be able to claim that we have opened the doors of higher education to everyone, though this higher education may be of extremely poor quality.

Overcoming the Resources Crunch

Usually when there is a shortage of funds, there are a number of ways for meeting the shortage.

1. The government increases its overall contribution to education;
2. The fees of students are increased significantly so that the students pay the same proportion of cost of higher education as in other countries;
3. Decrease number of students admitted;
4. Close down small economically unviable and inefficient colleges;
5. Provide more seats in correspondence courses and make correspondence courses more effective; and
6. Appoint adhoc lecturers and decrease the ratio of teachers to students and carry on the rituals of education. Also cut down budgets for libraries etc.

In our case the last alternative appears to have been chosen. It appears nobody is worried that a top quality higher education is needed for making India internationally competitive. We have accepted liberalisation and globalization and have thrown our markets open to multinationals, hoping that this will make our industry more competitive. However industry can be competitive not by just the attitude of entrepreneurs or by government policies, it can be competitive on the basis of the quality of higher education received by the students of the country. In our country there is no real higher education. Many of our undergraduates are equivalent to high school graduates of other countries and the facilities for real postgraduate education are almost negligible. We have to make our undergraduate education competitive with the undergraduate education of the rest of the world and this cannot be done by the policies being pursued in the higher education system. The system is suffering from a disease like AIDS in which the system has lost the desire to improve itself.

Let us be serious about higher education because excellent quality of higher education is the only way to enable us to reach the top in all fields of modern life.

Positive Aspects of Students' Evaluation of Teachers : What Teachers Think About Them

Ram Pal Vadhera*

Rationale of the Study

Students' Evaluation of Teachers (SET) is an issue which is being debated by the college and university teachers throughout the country. The debate started with the recommendation of SET by The Rastogi Committee and has not concluded yet, even though its implementation has been withheld, for the time being, by the UGC. The UGC is still in a dilemma regarding the implementation of this recommendation, as it is being vehemently opposed by the teachers' organisations. The issue of SET is so controversial that it has divided the teachers into two warring groups. The division of teachers on the issue shows that the teachers have failed to evolve any consensus among themselves, either for or against it. The opponents of SET have put forward strong arguments against it and have partially succeeded in their attempt to convince the UGC to not to implement it. At the same time there is another group of teachers, however small their number may be, who see full justification of SET and they are also giving equally strong arguments for its introduction. The UGC, on which lies the responsibility of implementing this recommendation has to understand the issue of SET in its totality before taking a final decision. In this regard Vadhera (1998), no doubt has reported on the reasons and magnitude of teachers' opposition to SET but that is only a one side story.¹ To have a better understanding of the issue one should also look into the opinions of the teachers on the positive aspects of SET and know the percentages of teachers having positive and negative attitude towards SET. Hence, the present study.

Status of Research on SET

Vadhera (1998) on the basis of review of related literature has reported that although SET has been a focus of intensive research inquiry abroad, researchers in India have not paid sufficient attention to it. The lack of empirical research on SET in India further establishes the need for the present study.

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Objectives

The study had the following objectives :

1. To find out the percentage of teachers having positive, and negative attitude towards students' evaluation of teachers.
2. To study the opinions of teachers on the positive aspects of students' evaluation of teachers.

Methodology

Sample : The sample of the present study consisted of 58 teachers (18 university teachers and 40 college teachers) of North Eastern Hill University, Mizoram Campus and its constituent, and affiliated colleges. The sampling design adopted was stratified sampling.

Tools : To study the attitude of teachers towards SET, a five point opinion survey scale consisting of 49 statements was developed by the investigator. In this scale every statement, except three statements (one each on multiple choice, open-ended, and arrangement of various alternatives in preferred choice), was to be rated by the teachers on a five-point scale from Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (DA) to Strongly Disagree (SDA). The responses to the positive and negative statements were scored as 5, 4, 3, 2, 1, and 1, 2, 3, 4, 5 respectively. Attitude score of a teachers was calculated by adding his scores on 39 statements. Rest of the statements were left out as these are either neutral or related to the teachers' suggestions on SET. For the realization of second objective of this study teachers' responses to the positive statements were analysed separately.

Statistical Technique : For the analysis of data, frequency distribution for each statement was prepared and percentages in each category calculated. The values of Mean, Median, Standard Deviation, and Skewness of the distributions of teachers having positive and negative attitude were calculated separately. To find out whether teachers' opinions, in relation to positive aspects of SET, show a particular trend skewness value of the distribution of teachers on each statement was also calculated.

Findings and Discussions

The findings of the study have been given under the following two broad headings :

A. Distribution of Teachers in Relation to Their Attitude Towards SET :

1. A perusal of Table-1 reveals that 46.55% of the teachers has a positive attitude towards SET. The range of their scores was from 3.05 to 4.46 with a mean score of 3.72. The same Table-1 further shows that their scores were positively skewed which means that more number of teachers had their attitude score near to the lower end of their distribution. This further implies that there were more number of teachers with a slightly positive attitude than with a highly positive attitude towards SET.
2. A casual look at Table-1 further reveals that 51.72% of the teachers had a negative attitude towards SET. The range of their score was from 1.59 to 2.97 with a mean score of 2.35. The same Table-1 also shows that the distribution of their score was negatively skewed, which means that more number of teachers had their attitude score closer to the upper end of their distribution. This further implies that there were more number of teachers with slightly negative attitude than with a highly negative attitude towards SET.
3. The same Table-1 also shows that 1.72% of the teachers had a neutral attitude towards SET as their mean attitude score was 3.00.
4. A critical analysis of the Table-1 reveals that the deviation (1.11 δ) of the mean score of the distribution of teachers having positive attitude, from the mean of the total distribution was much greater than the deviation (-0.73 δ) of the mean score of the distribution of teachers having negative attitude. This difference in the deviation scores, which was in favour of the group of teachers having positive attitude, indicates that positive attitude was much more stronger than the negative attitude.

Table-1. Percentages of Teachers having Positive and Negative Attitude towards SET, and the Values of the Mean, Median, Standard Deviation and Skewness of their Distributions

	Percent- age	Mean	Median	SD	Skew- ness	Devi- ation
Teachers having positive attitude	46.55%	3.72	3.62	0.34	+0.79	+1.11 δ

Teachers having negative attitude	51.72%	2.35	2.37	0.40	-0.15	-0.73 δ
Teaching having neutral attitude	1.72%	3.00	—	—	—	—
Total distribution	—	2.94	2.95	0.71	-0.8	—

** Deviation of the mean of the distribution from the mean of the total distribution in terms of standard scores.

B. Teachers Opinions on the Positive Aspects of SET :

1. *Students are the right judges of their teachers* : Table-2 shows that 67.24% of the teachers agreed with the statement that students are the right judges of their teachers and their teaching effectiveness. The same Table-2 further shows that 24.13% of the teachers did not agree with this statement and the rest of the teachers i.e. 8.62% remained neutral on the issue as they did not take any position either for or against this issue.
2. *SET will give feedback to teachers* : A casual look at Table-2 also reveals that 72.41% of the teachers accepted the statement that SET will help them in knowing their shortcomings and weaknesses, and give them a scope to improve in their successive teaching. The same Table-2 further depicts that only 17.24% of the teachers did not agree with this statement, and the rest of the teachers remained neutral on this issue. In response to a similar statement 67.23% of the teachers opined that SET will help them to know where they stand as teachers in the eyes of their students.
3. *Students are in the best position to evaluate their teachers* : A cursory glance at Table-2 depicts that 55.17% of the teachers have agreed with the statement that students are in a very good position to evaluate the teaching effectiveness of their teachers as they are the one who know better what happens behind the closed doors in the classrooms. Whether a teacher is teaching or cheating can be known only from the students. The same Table-2 further shows that 34.48% of the teachers did not agree with this statement, and the rest of the teachers i.e. 10.52% remained neutral.
4. *SET will enhance students' self respect and a sense of responsibility* : A quick glance at Table-2 reveals that 53.45% of the teachers opined that SET will enhance the self respect of students and promote a sense of respon-

Table-2 : Distribution of Teachers on Five-Point Scale in Relation to their Opinions on the Positive Aspects of SET, and the Skewness Values of their Distributions

	SA	A	UD	DA	SDA	Skewness
1. Students are the right judges of the teaching effectiveness of their teachers	5 (67.24%)	34	5 (8.62%)	11 (24.13%)	3	-0.94
2. SET will help teachers in knowing and improving their weaknesses	13 (72.41%)	29	6 (10.52%)	9 (17.24%)	1	-0.54
3. SET will help teachers to know where they stand as teachers in the eyes of students	13 (67.23%)	26	3 (5.17%)	13 (27.58%)	3	-0.77
4. Students are in a very good position to judge their teachers	8 (55.17%)	24	6 (10.52%)	19 (34.48%)	1	-0.80
5. SET will enhance students self respect and a sense of responsibility	8 (53.45%)	23	7 (12.07%)	17 (34.48%)	3	-0.88
6. Teachers will give their best only when their classroom teaching will be evaluated by their students	5 (37.93%)	17	7 (12.07%)	25 (50.00%)	4	+0.57
7. To check the deteriorating quality of classroom teaching students must be given a right to evaluate the effectiveness of their teachers	3 (56.89%)	30	6 (10.34%)	17 (32.75%)	2	-1.07
8. Poor quality of classroom instructions is because students have been denied their legitimate right to evaluate their teachers	1 (22.58%)	12	8 (13.79%)	25 (63.79%)	12	+0.62
9. College and university students are mature enough to evaluate the quality of teaching in classroom	6 (60.34%)	29	9 (15.22%)	12 (24.11%)	2	-0.81
10. Students rating of teachers shall be considerably more objective than any other alternative	4 (53.45%)	27	4 (6.90%)	22 (39.65%)	1	-1.14
11. Only students can objectively evaluate their teacher's teaching because they are the ones who sit in his class for months & years together	4 (60.35%)	31	8 (13.79%)	13 (25.83%)	2	-0.92
12. Students being the consumers of education should have a right to evaluate the quality of knowledge and learning experiences provided to them by their teachers	4 (60.34%)	31	4 (6.90%)	18 (32.75%)	1	-1.05
13. Students spend time and money on their education, therefore, they should be given a right to evaluate the teaching effectiveness of their teachers	1 (53.44%)	30	4 (6.90%)	20 (39.65%)	3	-1.33

sibility among them. The same Table-2 further shows that 34.48% of the teachers opined against this statement and the rest of the teachers i.e. 12.07% remained neutral on this issue.

5. *SET will make teachers give their best in the classrooms* : A casual look at Table-2 shows that only 37.93% of the teachers agreed with the statement that teachers will give their best only if their teaching is formally evaluated by their students. The same Table-2 further shows that 50.00% of the teachers expressed their disagreement with this statement, and the rest of the teachers i.e. 12.07% remained neutral on this issue as they did not take any stand either for or against this issue.

6. *SET will help in checking the deteriorating quality of classroom teaching* : A perusal of Table-2 reveals that 56.89% of the teachers themselves have accepted that if the falling standards of classroom teaching have to be checked then students must be given a right to evaluate the teaching effectiveness of their teachers. The same Table-2 further shows that 32.75% of the teachers did not accept this statement, and the rest of the teachers i.e. 10.34% remained neutral as they did not take any stand either for or against this issue.

7. *Absence of SET in Indian educational institutions is mainly responsible for the deteriorating quality of classroom teaching* : A casual look at Table-2 shows that only 22.58% of the teachers agreed with the statement that falling standards of classroom instruction is because students have been denied their legitimate right to evaluate their teachers. A further analysis of the same Table-2 reveals that 63.79% of the teachers did not accept this view. It was also found that 13.79% of the teachers remained neutral as they did not take any position either for or against this issue.

8. *College and university students are mature enough to judge the quality of teaching* : It was found vide Table-2 that 60.34% of the teachers agreed with the statement that college and university students are mature enough to judge the teaching competency and the style of their teachers. The same Table-2 further shows that 24.11% of the teachers expressed their opinion against this statement. It was also discovered vide Table-2 that 15.22% of the teachers remained neutral on the issue of students' maturity.

9. *Students ratings of teachers shall be more objective* : A quick look at Table-2 reveals that 53.45% of the teachers agreed with the statement that students' rating of teachers shall be considerably more objective than any other alternative viz. colleagues, head of the department or institution. In response to another statement 60.35% of the teachers have reported that only students can objectively evaluate their teachers' teaching because they are the ones who sit in the class of the same teacher for months and years together. In this regard Vadhera (1998) has also reported that teachers give first preference to the students for the evaluation of their teaching.

10. *Students being the consumers of education have a legitimate right to evaluate the teachers* : It was found vide Table-2 that 60.34% of the teachers expressed their opinion in favour of the statement that students as the consumers of education have a legitimate right to evaluate the quality of knowledge and learning experiences provided to them by their teachers. The same Table-2 also shows that 32.75% of the teachers did not agree with this statement, and the rest of the teachers i.e. 6.90% remained neutral as they did not take any position either for or against this issue.

An analysis of the Table-2 further shows that 53.44% of the teachers agreed with the statement that students spend time and money on their education. Therefore, they should be given a right to judge the quality of education being provided to them.

Conclusion

The findings of this study related to the positive attitude of 46.55% of the teachers towards SET, and favourable opinions of a large group of teachers on its various aspects will give some relief to the proposers of this innovation, who, so far, are under a false impression that all teachers have outrightly rejected the recommendation of SET. At the same time the investigator would like to caution the readers not to interpret these findings in isolation. Rather, these should be seen and understood in the background of various fears and concerns expressed by teachers about SET reported by Vadhera (1998).

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Indigenous Health Education in the Universities

Shakeel Ahmad*

The health problems being faced by us are highly complex and challenging. It is an old saying "Healthy mind lives in a healthy body". Right from the ancient period, many thinkers like Aristotle and other great physicians like Avicenna advocated strengthening the health system. Even towards the end of the twentieth century, hospitals, nursing homes and medicines are the fundamental needs of the people. Modern system of medicine is mostly used by urban people because the services provided are generally costly and available in urban areas. However, more recently people of urban areas are getting fed up with the modern system of medicine except that of surgery because the drugs which are used in the modern system manifest a large number of side effects and toxic reactions.

But the people living in rural areas generally depend on the traditional systems of medicine in India. Forty per cent of the urban population and half the rural population live below the poverty line. For them, it is easy to follow the traditional treatment which is reasonably simple. People of our country have faith in the traditional systems, the services provided are generally cheaper and easily available in rural areas and the remedies are known to be generally free from side effects. There are 107 systems of medicine under polypathy, fortunately, many of them are available in India.

Medical education has always been an important part of education system due to its prime utility in the upkeep of human health. Out of 107 systems of medicine under polypathy, Unani medicine (Greco-Arab medicine) is an important system of medicine in our country. Development of Unani medicine and imparting education parallel to the teaching of modern medicine are contributions of Jamia Hamdard. The main objective of the study is to highlight the contributions made by the Jamia Hamdard in the indigenous health education after Independence. This study also stresses the need for further promotion of indigenous health education in the universities. Recently, it has been estimated by WHO that 80% of the world's population rely chiefly on indigenous systems of medicine.

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In India, Unani system did not receive encouragement during the British Rule and declined. It is only after 1947 that the development of Unani medicine as well as other Indian systems of medicine gained considerable momentum. The Committee on Indigenous Systems of Medicine set up by the Government of India, in its report submitted in 1948, recommended a synthesis of modern and traditional medicine.² In 1976, the World Health Assembly (Resolution 29.72) drew attention to the manpower reserve constituted by those practicing traditional medicine. A year later, in 1977, it urged Member States to utilize their traditional systems of medicine (Resolution 30.49) and then, in 1978, it highlighted the importance of medicinal plants in the health care systems of many developing countries (Resolution 32.33). In the same year, the Alma Ata Declaration, that milestone in the history of public health, recommended giving high priority to the utilization of traditional medicine practitioners and birth attendants, and incorporating proven traditional remedies into national drug policies and regulations.³ The National Health Policy of 1983 envisages the necessity to initiate organised measures to enable each of the systems of Indian medicine that is Ayurveda, Siddha, Unani, as well as Homoeopathy to develop in accordance with its genius. The policy requires planned efforts to find an appropriate role and place for these different systems in overall health care delivery system in order to achieve the goal of health for all by 2000 AD.

The kind of higher education a university in a developing country provides to its students today, will play a vital role in determining the shape of social, economic, political and industrial development of the country in the years ahead. The function of a university today is not only to enable the students to attain excellence in knowledge, but also to contribute directly to national development, to furnish intellectual and moral leadership to the community at large. Today when our nation is struggling to march towards the establishment of an egalitarian society, based on political and economic justice and social equality, university education can no longer remain a passive spectator. The task of creating a new social order which has assumed paramount importance today cannot be overlooked by the university community. Thus, the goal of university education has a

dual character; firstly, the pursuit of knowledge and the attainment of excellence in different disciplines, and secondly, the development of a sense of ethos which makes the university community conscious of its obligations to the community at large of which it is an important segment. As the report of Education Commission (1964-66) so aptly points out, the university education should have emphasis on internal transformation so as to relate it to the life, needs and aspirations of the nation.

The rapid advances in science and technology have greatly influenced medical science and during the last 50 years the science of medicine has made tremendous advances. Meanwhile, the traditional systems of medicine in different regions of the world have not taken much advantage of the march of science.

Unani system has 32 institutions including 25 colleges associated with different universities in India. Unani medicine's institutions are also available in our neighbouring countries such as Bangladesh, Pakistan, Sri Lanka, Nepal, Tibet, Afghanistan and Iran. This system of medicine is recognized by the UN, WHO, and other related bodies. Asian Development Bank in Bangladesh has sponsored higher education in Unani medicine. Even in the West, Unani system is being accepted as an alternative system of medicine. Recently, Harvard University has established a Department of Ancient Medicine (including Unani).

Jamia Hamdard is the first and the only University established after Independence of India by a Muslim Wakf (hamdard) to promote education in specialized areas for the community in particular and the society in general. One of the faculties of Jamia Hamdard is Faculty of Medicine through which it is contributing and imparting health education. Faculty of Medicine is growing under the overall supervision of Prof. (Hkm.) Jameel Ahmad, one of the leading Unani Physicians in the country.

This Faculty is engaged in teaching and clinical research programme in the area of Unani system of medicine. The Faculty, erstwhile known as Hamdard Tibbi College, was one of the two premier and prestigious colleges of Tibb-e-Unani in Delhi. It was shifted to the Hamdard Nagar Campus in 1980. The faculty comprises 8 departments : Department of Amraze Niswan, Qabalat-o-Atfal (Gynaecology & Obstetrics), Department of Hifzane-Sehat and Ilmul Samoom (Hygiene & Toxicology), Department of Ilmul Advia (Pharmacology), Department of

Jarahiyat (Surgery), Department of Kultiyat (Fundamentals of Unani Medicine), Department of Moalijat (Medicine), Department of Tashreeh and Munafeul Aza (Anatomy & Physiology) and Department of History of Medicine and Science. The objectives of the Faculty are : a) to produce competent Unani physicians and surgeons with extensive knowledge and expertise in the fundamental theories of the Unani system of medicine coupled with the latest medical know-how needed for serving in the medical and health services of the country, and b) to establish an authentic history of the Unani system of medicine and explore new horizons to face the modern challenges to human health.

The teaching programmes include undergraduate B.U.M.S. course of 5 years and a postgraduate M.D course of 3 years in the area of Ilmul Advia (Pharmacology) and Moalijat (Medicine) besides 1 year Pre-Tibb course. The research projects include the development of formulations from herbs for curing a number of diseases that include hepatitis, diabetes, bronchial asthma and leucorrhoea.

Jamia Hamdard is producing around 60 unani physicians every year. Along with maintaining sound modern infrastructures, library and labs for scientific research and education, the University has established its own distinct identity in the field of developing and maintaining the Unani system of medicine. Jamia Hamdard maintains a 150 bed multi-discipline hospital, providing treatment in Unani as well as modern system of medicine. This is the only hospital in Delhi where Unani and the modern systems go hand in hand and act as complementary to each other. Every year over 18,000 patients are treated in the Unani section. The average number of cases admitted per month is 440 in the Unani Section. Majeedia Hospital is attached with the Faculty of Medicine. Teachers of the clinical allopathic subjects are made available to acquaint the Unani practitioners with the modern methodology and develop an integrated approach to health and disease. The hospital is rendering services for clinical trials of single and compound drugs. In the Unani wing of the hospital about 15 million patients have been clinically examined since 1960. Recently, three herbal drugs namely "Ajmaloon" for hypertension, "Jigrin" for liver disorders and "Lipotab" for hypercholesterolaemia, all formulated by Hakeem Abdul Hameed Sahib, have been clinically tested at Jamia Hamdard and in other medical colleges and allied hospitals. The results of the tests are very encouraging.

(Contd. on page 18)

SPREAD SHEET

International Students in India (1986-87 to 1995-96)
(Region-wise and Country-wise)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Ethiopia	193	206	45	46	48	64	65	62	206
Kenya	1972	1902	232	256	345	380	428	291	210
Malawi	19	11	6	4	0	9	0	4	7
Mauritius	195	197	24	194	209	219	26	33	24
Mozambique	1	1	3	3	0	1	1	2	2
Rwanda	406	263	48	159	163	168	152	128	99
Somalia	52	54	52	52	52	57	57	29	132
Tanzania	54	33	14	14	11	7	7	7	26
Uganda	32	16	10	5	3	7	4	7	7
Zambia	2	2	2	2	2	3	3	7	5
Zimbabwe									
Middle Africa									
Angola								1	1
Cameroon							0	1	1
Chad							0	1	0
Gabon							0	0	1
Zealand							0	0	1
Southern Africa							1	0	1
Botswana							1	1	1
Lesotho							0	0	0
Namibia							0	0	1
South Africa							10	1	1
EUROPE							24	5	3
Northern Europe							3	0	0
Denmark	3	2	1	0	0	0	0	0	1
Finland	6	2	1	1	1	1	0	0	0
Iceland	1	1	0	1	1	1	0	1	1
Norway	0	0	0	0	0	0	0	0	2
Sweden	4	0	0	0	0	0	0	0	0
United Kingdom (England) (Scotland) (Wales)	83	75	111	70	70	68	61	62	46
Western Europe							2	2	2
Austria	0	0	0	0	0	1	1	1	1
Belgium	3	3	3	2	2	3	3	3	3
France	37	24	23	23	23	22	22	18	27
Germany	11	15	13	13	13	13	13	14	22
Netherlands (Holland)	3	2	2	2	2	2	2	2	2
Switzerland							0	0	0
Eastern Europe							0	0	0
Armenia	0	0	0	0	0	0	0	0	0
Bulgaria	2	2	2	2	2	2	2	2	2
Czech (Czech Republic)	1	1	1	1	1	1	1	1	1
Hungary	0	0	0	0	0	0	0	0	0
Poland	3	0	0	0	0	0	0	0	0
Romania	0	0	0	0	0	0	0	0	0
Russia	9	3	3	2	2	2	2	2	2
Southern Europe							0	0	0
Cyprus	0	0	0	1	1	1	1	1	1
Greece	3	3	3	3	3	3	3	3	3
Italy	3	3	3	3	3	3	3	3	3
Portugal	6	6	5	5	5	5	5	5	5
Spain	6	6	5	5	5	5	5	5	5
Albania	5	5	5	5	5	5	5	5	5
Malta-Turkey	0	0	1	1	1	1	1	1	1
THE AMERICAS							0	0	0
North America							56	56	56
Canada							201	362	324
USA							106	106	106
Central America & Caribbean							36	36	36
Mexico	1	2	1	1	2	2	1	0	0
Panama	0	0	1	1	1	1	0	1	2
Dominican Republic	5	2	2	2	2	2	0	0	0
Trinidad & Tobago	7	6	6	6	6	6	0	0	0
Barbados	2	2	2	0	0	0	1	1	0
South America							0	0	0
Argentina	0	0	0	0	0	0	0	0	0
Brazil	1	1	1	1	1	1	0	0	0
Chile	1	1	1	1	1	1	1	1	1
Guyana	10	1	1	1	1	1	1	1	1
Peru	0	0	0	0	0	0	0	0	0
Surinam	1	0	0	0	0	0	0	0	0
Venezuela	0	0	0	0	0	0	0	0	0
Guadeloupe	155	205	213	310	369	386	29	60	902
Total	10,282	10,651	11,944	12,463	12,530	12,765	12,766	11,000	9,002

Note: No data is available for 1991-92.
Source: Student Information Service Division, Association of Indian Universities, New Delhi-110 002.

Indigenous Health Education in the Universities

(Contd. from page 15)

Besides these, the University has been active in organising refresher courses for college teachers. Most of the teachers of this Faculty are participating in national and international seminars. They are also contributing research papers to popularize Unani system of medicine.

With the financial assistance from the Ministry of Health and Family Welfare, a Herbal Garden has been developed on university campus which may come up as a national facility. At present, the Garden serves as basic infrastructural facility for the departments of Botany, Pharmacognosy and Unani Pharmacology where research is being done on the scientific evaluation of herbal drugs and their efficacy. Extensive studies are being planned for development of cultivation procedures and conservation of medicinal plants. Thus, Jamia Hamdard provides Unani medicine, trained and competent Unani physicians and also provides scientific basis to this traditional system of medicine through experimental and clinical researches.

Jamia Hamdard has indeed developed into a model for promoting the concept of health and education. Under the enlightened vision and versatile personality of Hakeem Abdul Hameed Sahib, Chancellor, Jamia Hamdard has succeeded in its long journey towards achieving excellence in learning and healing. Socrates once said that there is nothing stronger than human determination. Hakeem Abdul Hameed Sahib is indeed a man of strong determination, and it is his commitment to the cause of medicine that the Jamia Hamdard has emerged not only an apex institution of Unani Medicine but also of other related sciences. In the pursuit of health-care, the University has developed the well tested effective system of Unani medicine interfaced with modern science and technology. University is making best efforts to make an effective use of herbal and mineral resources through traditional system. University's Majeedia Hospital provides facilities for practicing herbal medicines and facilitating clinical support to our teaching and research wings. The University has produced a comprehensive infrastructure to rejuvenate our traditional system of healing art and certain innovative researches which are being pursued in Unani System here, may be catalyst in making our country free from dangerous diseases.

Nature has bestowed upon us a large number of plants, herbs and other natural resources useful for our herbal medicine. And we have a long history of practicing herbal system of medicine. Therefore, the development of the Unani system of medicine in this country is likely to serve the people in best way. Besides pursuing higher education in indigenous medicine, particularly Unani system, it is easier to establish hospitals at low cost. Possibility of very rare side-effects of Unani medicine is also a reasonable factor to attract the people towards this system. Under this system one can generate resources by growing plants, cultivating saffron, flowers, farming, cattle-breeding, poultry and honey. Almost all students passed out of traditional systems of medicine including unani get either government jobs or are self-employed by the way of establishing their private clinics. Thus, the Unani system of medicine has a bright future in the field of indigenous medicine. But, in this current phase of competition and identity formation, the amount being spent on Unani system of medicine is meagre as compared to the amount being spent on modern health education. English-speaking students and teachers of western system of medicine are provided with better labs, hospitals, funds, equipments, communication and transportation systems, whereas, the Unani practitioners and students have a strong feeling of their comparative deprivation and backwardness. The number of educational and research institutes are also not enough to provide support to the people of India in alleviating their sufferings. Jamia Hamdard and other similar institutions as are playing an important role in the promotion of indigenous health education to overcome the health problems in India need more care, funds and co-operation from the government in particular and non-government agencies in general.

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CAMPUS NEWS

Symposium on Science & Technology Education

The lack of facilities and zeal was responsible for the brain-drain of scientists from the country, said Professor MGK Menon, the former Union Minister for Science and Technology. He was speaking at a symposium on 'Science and Technology Education,' organised by the Central Drug Research Institute in Lucknow recently.

Stating that science had been a part of the country's tradition and culture, he regretted the fact that politicians had used science in all the fields except the development. "We have been conducting experiments in the fields already developed and have ignored all other fields where lots of experiments are required. As a result we are lagging behind other countries in area of Science and Technology," added Prof. Menon.

Prof. Menon stressed the need for a critical analysis of the prevailing science education system. He emphasised not only revamping the teaching environment, but also the teacher's psyche. The latest technologies must be introduced to teach the students, he added, for making the subject more interesting, thereby, generating a scientific temper among the students.

Prof. Menon also laid emphasis on developing a strong science base at the college level. This, he said, would help in generating inquisitiveness among students and would further encourage them to work hard.

He felt that failure of the country to make a major breakthrough in the field of science and technol-

ogy was primarily due to the lack of commitment on the part of the scientists.

Quality Management in Higher Education

The first Western Region Meet of the Xavier Board of Higher Education in India, after the Chennai 1998 Triennial, was recently organised by the Rosary College of Commerce & Arts, Navelim, Goa. Principals and senior leacturers of the colleges of the western region met to discuss common issues and deliberate upon the theme "Quality Management in Higher Education". This theme is in synchronisation with one of the main themes of the UNESCO World Conference on Higher Education held in October this year in Paris — improving management of higher education in forms of relevance & quality.

The programme began with the opening remarks by His Grace Archbishop Patriarch Raul Gonsalves, Archdiocese of Goa & Daman, who stressed that teachers were the light of the world and it was their responsibility to radiate this light which came from Lord Jesus Christ, in their zone of action and thereby improve the quality.

Principal Newman Fernandes in his welcome address emphasized the relevance of the theme of Quality Management, and hoped that the outcome of the meeting would be stimulating & fruitful.

Fr. Casmiro Raj from the Goa Institute of Management, Ribandar in his keynote address,

said that Catholic Colleges did well, because they viewed education as an apostolate, a mission-of desiring to live up to the Gospel : "Be perfect as my heavenly father is perfect." The aim of quality, he said was to provide value to customers by doing the right things, right, the first time, and every time." He highlighted the key areas of Academic Excellence, Relevance, and Integral Formation in arriving at quality education.

In his address, the Archbishop focused on the constant renewal of the Catholic educational institutions. Quoting from the recent document "The Catholic School on the threshold of the Third Millennium" issued by the Congregation for Seminaries and Educational Institutions, the Archbishop said that "education and schooling become particularly difficult today because the scope of educational functions has broadened and new requirements have given force to the demand for the new contents, new capabilities and new educational models besides those followed traditionally".

He elaborated on the fundamental characteristics of the catholic educational institutions, namely, an integral education of the human person through a clear educational project of which Christ is the foundation, its ecclesial and cultural identity, its mission of education as a work of love, its service to society, and the traits which should characterize the educating community. He said that the quality of our institutions would depend on these fundamental characteristics. Quoting the above Vatican Instruction he said that "teaching has an extraordinary moral depth and is one of

man's most excellent and creative activities, for the teacher does not write on inanimate material, but on the very spirits of human beings."

Fr. Casmiro Raj presented a paper on "Management for Quality Education." He stressed that quality was no "accident" but a result of conviction, commitment & priority. He felt that Quality had to become a passion & obsession with educators, and every person concerned with educational institutions. He warned of the rising tide of mediocrity in educational institutions and added that we were getting soaked in mediocrity. He emphasized the need for a paradigm shift—a shift from the existing priorities. Care has to be taken of the three important factors that determine quality in education, namely, people, system and processes, he added and urged the Xavier Board of Higher Education to become the catalytic agent in managing quality specially regarding the syllabi in order to make them relevant to the needs of the society.

This was followed by a workshop wherein the participants discussed the ways in which quality education could be imparted with regard to Excellence, Relevance & Integral Formation. The groups consisting of principals, lecturers and students as well, provided some valuable insights & suggestions. They analysed how we could impart quality education in the existing system as well as through innovative systems. They also discussed ways and means of utilising varied talents of all persons in the campus for improving quality.

Mr. Les Menezes, the Head of the Dept. of Communications at Goa Institute of Management conducted the session on "Quality Management in Teaching". This

session was arranged, having in mind the UNESCO recommendation which said "Improving the quality of education depends in first improving the recruitment, training, social status and conditions of work of teachers; they need the appropriate knowledge and skills, personal characteristics, professional prospects and motivation if they are to meet the expectations placed upon them". Mr. Menezes provided a novel perspective to teaching aids and learning skills. He suggested tips to make learning more effective, like promoting experiential teaching, verbal & non verbal delivery skills, and neurolinguistic devices like Mind-Maps. He also explored possibilities of developing the potential of the entire brain through simple exercises; so that the classroom situation was improved.

Monsignor Alberto Luis, Director of Caritas — Goa, the chief guest at the valedictory function, said that teaching should be regarded as a mission rather than a profession, and compared the role of an educator to that of a candle which sacrificed itself in the process of keeping the light alive. He said that if "Excellence, Relevance and Integral Formation" were taken care of, quality would be a natural corollary.

Principal Newman Fernandes in his valedictory address, stressed that enforcing quality should be taken up with vigour in the educational arena, in order that the beneficiaries get the advantage of integral formation and the institutions serve the community efficiently.

Andhra Varsity Nuclear Reactor

The nuclear reactor being set up on Andhra University campus for carrying out research will be commissioned in four years. The

university authorities are contemplating to prepare its faculty and research scholars for optimum utilisation of India's first low-power nuclear research reactor. According to Prof. G.S. Murthy of the department of physical and nuclear chemistry and chemical oceanography and coordinator of the research reactor project, a seminar was recently organised on 'Reactor-based teaching, training and research programme' to chalk out a programme and prepare the faculty for proper management of the reactor.

Prof. Murthy said that it would take four years to complete the construction and commissioning of the reactor and that the Department of Atomic Energy and Bhabha Atomic Energy and Bhabha Atomic Research Centre would design, construct and commission the 100 kilowatt reactor.

The reactor would be fully owned by the Department of Atomic Energy which had sanctioned Rs. 9.5 crore for it under the Ninth Five Year Plan. The project will be a joint venture between the State government, Andhra University and the Department of Atomic Energy.

The university will operate the reactor with technical support from BARC and the State government would bear the maintenance costs totalling Rs. 75 lakh per annum.

Listing out the main objectives of the reactor, Prof. Murthy said it would be developed as a regional research facility catering to the needs of academic institutions and industrial organisations of this region.

It will encourage inter-disciplinary research activities, create awareness towards peaceful use of atomic energy programmes in

academia and general public, develop as a regional centre for supplying radio-isotopes and labelled compounds to the user institutions and train manpower in various disciplines to man the future nuclear programmes in the country.

Enriched uranium 235 and artificial uranium which is extracted from thorium would be used as nuclear fuel.

Internet and Education

The Commonwealth Educational Media Centre for Asia (CEMCA), in collaboration with the Indira Gandhi National Open University (IGNOU) proposes to organise a five-day International Training Programme on Internet and Education from 28 December, 1998-January 1, 1999 at Hyderabad. The training programme will focus specifically on use and integration of internet in education. This practical exposure to internet will initiate skills in Internet browsing & accessing information, outlining HTML to design web pages, embedding of images & HTML links in the Web pages, creation of static and dynamic web pages and management and regulatory issues of Internet based learning. The faculty for the training programme would consist of experienced Instructional technologists and computer professionals from IGNOU and outside.

The intended participants for the training programme should preferably be employed in an academic institution/government agency/non-government organisation and have working experience on Windows based machines. Registrations from University administrators, policy makers in the educational organisations, academics in any discipline and extension educators (agriculture, health and other areas) are welcome. The registration fee for the

training programme is Indian Rs. 7000/US \$200 (includes boarding and lodging per participant). Nominations alongwith the registration form and fee of Rs. 7000/ US \$ 200 per participant may be sent (not later than 1 December, 1998) to CEMCA, 52, Tughlakabad Institutional Area, New Delhi-110062 Fax. 6985208 e-mail : cemca@giasdl01.vsnl.net.in

Educational Culture in 21st Century

An International Conference on Educational Culture in the 21st Century : Knowledge, Teacher and Technology is proposed to be held on 29-31 January, 1999 at Administrative Staff College Khanapara, Guwahati (Assam).

To be organised by the All India Association for Educational Technology, Assam Chapter, the International Conference will focus on the problems of Education faced by this region. It also envisages a global perspective of educational culture at the dawn of the new century.

The focal theme of the conference is Educational Culture in the 21st century : Knowledge, Teacher and Technology.

The sub-themes include : Information explosion, widening knowledge domain and their impact on prevalent educational practices; Educational practices in the changing society of 21st Century — Future trends; Teacher Education and Technology — Global and National perspectives; Distance Education and Open Learning; Adult literacy and pluralistic society — priorities in Education; Primary Education and impact of World Bank assisted DPEP Projects; Economics of Higher Education and cost of Educational Technology; Technological support for the teachers through in-

stitutional collaboration and networking; Education of women and disadvantaged groups : Issues in Human Rights and education of the minorities; Issues in special Education in Law, Agriculture, Management, Technology, Environment Education & Population Education; and Communication Technology in Education and virtual classrooms.

Further details may be obtained from Dr. K.M. Baharul Islam, Conference Secretary, International Conference Secretariat, Deptt. of Humanities, REC Silchar-788 010 (Assam) India Tel: 03842-33357 (Res) 33841 (Off), Fax: 91-3842-34942 or 33797, E-mail : bahar @ dte.vsnl.net.in

CALIBER-99

The INFLIBNET Centre, Ahmedabad and the Nagpur University propose to organise the Sixth National Convention on Academic Libraries in the Internet Era, 'CALIBER-99' on February 18-20, 1999 at Nagpur.

The objectives of the convention are to understand the application of INTERNET in Academic Libraries; to identify the basic requirements of getting connected to INTERNET and discuss the issues involved; to identify and evaluate the resources available on the INTERNET to support higher education and research; to understand the tools and techniques involved in designing Web pages and use of the Web pages for promoting information services; to study the Information Retrieval Mechanisms using the search engines; to evolve a methodology to train the library staff and end users in making effective use of INTERNET; and to prepare the academic libraries to absorb this new technology effectively.

The main theme of the Convention is "Academic Libraries in

the INTERNET Era". The sub-themes and the topics to be covered under each sub-theme are: (1) Academic Libraries and Access to INTERNET and INTRANETS — Technological environment for organising' INTERNET and INTERANET services; Impact of INTERNET and INTRANETS on library services; Advantages and limitations of INTERNET and INTRANET based services; and Connectivity options and issues. (2) Information Sources on the INTERNET for Higher Education and Research — Science and Technology; Social Sciences and Humanities; Library Catalogues, electronic journals, reference sources etc; Subscription, licensing, access and cost aspects; Selection and evaluation of INTERNET sources; and Impact on collection development. (3) Internet and Web Search Engines — INTERNET search engines; Web search engines : Alta Vista, Yahoo etc; Meta search engines; Rating services; and Subject-specific search tools. (4) Developing Library Web Sites — Components of library Web sites; Design methods and strategies; Library Home Page; Content creation strategies and issues; Authoring tools and techniques; Hardware and software aspects; and Case studies. (5) Education and Training for INTERNET Use — Curriculum related issues; Infrastructural facilities in L & I Science schools; Training facilities; and Training of L & I Science Teachers.

The Convention is intended for University Librarians and their professional colleagues; Faculty members from library and information science departments; Information scientists and professionals engaged in library automation and networking; Professionals working in R&D libraries; Information providers, consultants and users; and Professionals from other academic institutions.

Further details can be had from (1) Dr. P.S.G. Kumar, Organising Secretary, CALIBER-99, University Librarian, Nagpur University Library, North Ambazari Road, Nagpur-440 010 (Maharashtra) OR Dr. T.S. Kumbar, Convenor, CALIBER-99, Scientist-D(LS), INFLIBNET Centre, Gujarat University Campus, P.B. No. 4116, Navrangpura, Ahmedabad-380009.

Campus Voice 1998

Revised schedule for talented singers — musicians to be launched and promoted in Music Industry.

College Level Contests : Till 30 November, 1998.

Inter College Contests : Till 25 December, 1998.

Zonal Level Contests : January 1999 (Dates to be notified).

National Level Contest : January 1999 (Venue and dates to be notified).

Contest Categories

A: *Idol (Individual)* : Focuses on artist's personality and knowledge of music. Those playing an instrument while singing to be preferred.

B: *Group Band* : Maximum 5 (Five) people of same college in a Group must play their own instruments (Western) while singing. Groups writing and composing their own songs will be preferred.

C: *Solo* : An individual artist writing, composing, playing and singing his/her own creations.

For further information and participation contact : University Cultural Coordinators/ DSW OR Manish Mishra, Manix Entertainment, 2/38, Juhu Gulmohar, Gulmohar Road-1 Juhu, Mumbai OR Sampson David, Sr. Cultural Officer, AIU.

Om Prakash Bhasin Awards 1996-97

Dr. Murli Manohar Joshi, Minister for Human Resource Development and Science and Technology said that Indian scientists needed to rediscover the country's scientific heritage. He was presenting the Om Prakash Bhasin Awards for Science and Technology 1996-97, in New Delhi recently. He said that he had observed a tendency among Indian researchers to follow their western counterparts. This practice was unhealthy and undesirable, he said and added that our scientists should be setting the standard for the world to follow, an achievement they were well capable of.

The Om Prakash Bhasin Awards are given every year to outstanding scientists in the country for pioneering work in seven fields : Agriculture and Allied Sciences, Biotechnology, Electronics and Telecommunication, Energy including Atomic Energy, Engineering and Transportation, Health and Medical Sciences and Space and Aerospace.

Dr. C.G. Krishnadas Nair received the 1996 award for Space and Aerospace for making significant contributions to the indigenous development of material and processing technologies for the aerospace industry in India.

Dr. Nair also made noteworthy contributions in evolving acceptable criteria for aircraft components, reliability of aircraft structures and technology for manufacture and repairs of composite structures and components. During his tenure as managing director of the Hindustan Aeronautical Ltd., Bangalore, he

was credited with providing leadership for developmental work.

The 1997 award in the same field was given to Dr. K.N. Shankara who had worked for the Indian Space Research Organisation (ISRO) and provided leadership in the design and development for the INSAT-2 space project.

The awards for Agriculture and Allied Sciences went to Prof. A.N. Purohit ('96), Dr. H. Shekhar Shetty ('97) and Dr. S.L. Mehta ('97). Awards for Biotechnology were given to Prof P.K. Maitra ('96), Dr. Lalji Singh ('96), Prof Balasubramanian ('97) and Dr. S.K. Basu ('97); for Electronics and Telecommunication to Dr. K. Neelkantan ('96), Dr. D. Dutta Majumdar ('96) and Dr. Surendra Pal ('97); for Energy including atomic energy to Dr. M.R. Srinivasan ('96) and Dr. K.S. Narasimhan ('97); for Engineering and Transportation to Dr. T.S.R. Prasada Rao ('96) and awards for Health and Medical Sciences were given to Dr. Kalyan Banerjee ('96), Dr. Ved Prakash Kamboj ('96), Dr. N.K. Ganguly ('97) and Prof Sneh Bhargava ('97).

Biological Control of Insects

The Department of Zoology, Bharathiar University, Coimbatore, proposes to organise a National Symposium on Biological Control of Insects in Agriculture, Forestry, Medicine and Veterinary Science on January 21-22, 1999.

The symposium aims to explore the current status of development and technology in the field of biological control of insects. Major themes will include

biotechnological approach to biological control of insects; neem and other botanicals and pest management; viral, bacterial and fungal pesticides; entomopathogenic nematodes; vector control; prey-predator-parasite relationships; biocontrol in sericulture; eco-friendly pesticides and bio-diver-

sity; bio-park, bio-farming and conservation.

Further details may be obtained from Dr. K. Murugan, Organising Secretary, BCI '99 Symposium, Department of Zoology, Bharathiar University, Coimbatore-641046.

News from Agricultural Universities

Workshop on Medicinal Plants

Prof. J.B. Chowdhury, Vice-Chancellor, CCS Haryana Agricultural University, impressed upon the scientific community to help preserve country's biodiversity which was under threat because of rapid loss of its natural habitat and over-exploitation of plant species particularly of medicinal importance. He pointed out that India was producing medicinal plants worth 300 million US dollars annually. However, he added this profit was unlikely to last longer, unless due attention was given to the replenishment of the biodiversity, and commercial cultivation of medicinal as well as aromatic plants was promoted. Prof. Chowdhury was addressing the 12th All India Workshop on Medicinal and Aromatic Plants held recently at CCSHAU. He called upon the delegates to give a thought to these issues and chalk out a strategy during the course of deliberations which could help promote commercial cultivation of medicinal and aromatic plants and prove to farmers to be a lucrative proposition.

Dr. R.N. Pal, Addl. Director-General, ICAR, who presided, stressed easy as well as increased availability of planting material of this group of plants, saying it would help promote their cultivation. He said, "Our achieve-

ments in this field have been quite encouraging in the past, but we need to reorient our researches to compete in the global market". He said while working on increasing the productivity of these plants, the scientists should also ensure quality of the herbal products.

Dr. B.L. Jalali, Director of Research, CCSHAU, said the research on medicinal and aromatic plants at the university had gained momentum, and revealed that it had developed excellent varieties of Isabgol (HII), Mulahthi (HM-1) and Rosagrass (RH-49). He claimed that HM-1 variety of Mulahthi had no parallel in quality in the world.

Dr. B.P.S. Lather, Head, Department of Plant Breeding, while underlining the objectives of the workshop said that the research work on medicinal and aromatic plants done at state agricultural universities and ICAR institutes during 1996-98 would be reviewed and a programme of work for the next two years finalized.

The workshop was attended by over 60 scientists of state agricultural universities and institutes of the Indian Council of Agricultural Research (ICAR) as well as representatives of some pharmaceutical units.

Tissue Culture Unit at UAS

An extended and remodelled Plant Tissue Culture and Molecular Biology unit has been inaugurated at the University of Agricultural Sciences, Bangalore. UAS Vice-Chancellor Dr. S. Bislaiah, who inaugurated the unit, said that steps would be taken shortly to sell quality saplings, which would be produced through tissue culture at the lab, to farmers.

Dr. B.N. Sathyanarayana, principal investigator, in-charge of the Plant Tissue Culture Lab, claimed that UAS was the first among India's universities to have a commercial tissue culture unit.

The lab has already produced saplings of horticultural crops like jackfruit, neem, rose apple besides ornamental, medicinal and aromatic crops. In fact, the lab was the first in the world to produce saplings of star fruit (carambola) through somatic embryogenesis, he claimed.

The UAS has also developed a new mango variety called 'MA-I', which has lesser spongy tissue and more fruit content. While other mango varieties have 45 per cent spongy tissue, the MA-I has only about 10 per cent spongy tissue. The new variety is said to be suited for exporting to other countries.

Plants in Glass Tubes

The CCS Haryana Agricultural University scientists have succeeded in raising medicinal and flowering plant species in the glass tubes. Drs. S. Babber, S.C. Goyal and Vinita Bhatia, under the leadership of Dr. T.M. Varghese, have devised a protocol for mass propagation of *Solanum nigrum* and *Cardiospermum halicacabum*, both pharmaceutically important herbs. Using plant tissue culture technique this team has raised

hundreds of plants of both these species and successfully transferred them into the field.

According to Dr. Varghese, these plants bloomed and bore fruits as well. He said the *Solanum* plants raised through this technique were more vigorous and were 2-3 times larger than the parent plants. Besides profuse flowering these plants bore fruits and seeds which were one and a half times bigger in size than the conventional species. He said the performance of this seed will be studied in the subsequent generations in the field.

Ms Meena Kumari of the Botany Department, however, has raised thousands of plants from a small fragment of stem of a few commercially favourite *Chrysanthemum* varieties using micro propagation technique. The plants had been grown to flower in the Botanical Garden of the University with 80 per cent success. Ms Meena has also perfected this technique of tissue culture in *Chrysanthemum* under the guidance of Dr. Varghese. She said lakhs of plants can be developed from a small piece of stem during a season, employing this technique and claimed that flowers bore by the test tube plants were of better quality.

The university had also made remarkable achievements in biotechnology including tissue culture. Besides establishing micropropagation technology for date palm, sugarcane, potato and

some ornamental plants, technology for transfer of genes in plants has been perfected.

Prof. J.B. Chowdhury, Vice-Chancellor and a cytogeneticist, said that tissue culture was much efficient and cost effective technology as compared to conventional breeding method and true-to-type plants could also be produced with this technique. He said the scientists in the Biotechnology and Molecular Biology Department were trying to evolve genetically engineered Basmati rice genotypes and disease resistant varieties of sorghum.

Giving details, Prof. Chowdhury said, "We have succeeded in identifying some gene fragments responsible for providing resistance to sorghum against important diseases, which would be transferred into high yielding sorghum varieties by employing genetic engineering techniques". Similarly, genes imparting drought and salinity resistance would be introduced in commercially cultivated varieties of Basmati rice, he added.

He also revealed that a Centre for Research and Application in Plant Tissue Culture, a joint venture of the Science and Technology Department of Haryana and the Department of Biotechnology, Government of India, was in the offing at the CCSHAU campus. "Once this centre starts functioning, the pace of agriculture in Haryana would get a new impetus", he pointed out.

News from UGC

Countrywide Classroom Programme

Between 22nd and 30th November, 1998 the following schedule of telecast on higher education

through INSAT-1D under the auspices of the University Grants Commission will be observed. The

programmes are telecast on the Doordarshan's National Network from 7.15 to 8.00 a.m. every day except on Saturdays & Sundays. These programmes are also telecast on Doordarshan's National Network from 6.00 to 7.00 a.m. two days a week i.e. on Saturdays and Sundays. On DD2 International Programme will be shown at 11.00 to 12.00 hours on Saturdays only.

Hindi Programmes are being telecast on Mondays to Fridays from 6.00 to 6.30 a.m.

22.11.98

"Save the Elephant"
"Swimming Sensation . V. Kutraleeswaran"
"Searching the Frontiers-2 Bioceramics"

23.11.98

"The Story of Cement"
"Pi-An Unending Story in Mathematics"

24.11.98

"Gene Bank for Medicinal & Aromatic Plants"
"Mount Vesuvius"

25.11.98

"Low Cost appliances for Plant Protection"
"Neem — The Green Goldmine"

26.11.98

"Question time-89"
"Cobra : God at Mercy"

27.11.98

"Boat Building : A Tradition Marginalised"
"Vision Beyond Sight"

28.11.98

"Indian Women : From Rhetoric to Reality — Women & Education-6"
"Speeches on Speech-1"
"Analysing Aggression"
"International Programmes"

29.11.98

"Triangulation Survey or Topo Graphic Mapping"
"The Palm Oil"
"Searching the Frontiers-3 : The Wonder Wire"

30.11.98

"Riddles of the Heaven"
"Slicing n-Cubes"

Hindi Telecast

प्रातः 6.00 से 6.30 बजे तक

23.11.98

"गुजरात का लोकनाट्य भवाई : भाग-1"

24.11.98

"गुजरात का लोकनाट्य भवाई : भाग-2"

25.11.98

"गुजरात का लोकनाट्य भवाई : भाग-3 स्वरूप"
"व्यक्तित्व"

26.11.98

"गुजरात का लोकनाट्य भवाई : भाग-4 भाषा"

27.11.98

"गुजरात का लोकनाट्य भवाई : भाग-5"

30.11.98

"हेवा"

News from Abroad

Virtuality in Education

CAL 99 is the title of a Conference on Virtuality in Education to be held on 28-31 March 1999 in London, UK.

The conference will look at the influence of 'virtuality' on education. Virtuality (i.e. Web-/electronic-based activity, whether commercial, business, leisure or educational) has been an outcome of the proliferation and combination of multimedia and electronic networks worldwide.

Questions to be asked will be: 'What are the implications of virtuality for learning and teachers?' And, in particular, 'What are the implications of emerging notions of virtuality which conceive virtual representations as part of the real world in themselves?' For example, how will 'cyber-societies' (i.e. groups of people in contact via the Web), which are viewed as no less real by their participants than local neighbourhoods, impact on learning and teaching?

The CAL 99 aims to provide a forum for discussion of these is-

sues of virtuality and education.

Key topics will include (i) Learning in virtual environments — theories of learning and virtuality, the changing role of the learner, new forms of educational software, identity in virtual educational environments; (ii) Teaching in virtual environments — virtuality and the curriculum, the changing role of teachers, continuing professional development in an on-line environment; (iii) Education without walls — learning communities, 'The National Learning Grid', learning in the home, learning in public, for example in museums and art galleries, learning at work, 'lifelong learning'.

Further details may be obtained from Phillipa Orme, CAL99 Conference Secretariat, 12 Church Street, West Hanney, Wantage, Oxfordshire OX12 0LN, UK. Telephone +44 1235 868811, Fax +44 1235 868811, E-mail p.orme@dial.pipex.com Web site <http://www.elsevier.nl/locate/cal99>

Handbook on Gender Studies

Mala Pandurang*

Shirin Kudchedkar and Sabiha Al-Issa, Eds. Violence Against Women — Women Against Violence. Delhi, Pencraft International, 1998. Pp. 270. Rs. 400.

This collection of essays is the outcome of an Indo-Canadian seminar organized by the SNDT Women's University, Mumbai, on violent acts against women as a product of systems of patriarchy. The collated papers therefore focus on how this violence is manifested in various forms such as rape, domestic abuse, foeticide, dowry harassment, female infanticide etc etc. Parallel to this are discussions of how women should seek means of organizing and asserting themselves politically and socially. The call of the editors is for a 'feminist commitment' to collectively challenge systems of oppression.

The contributors to the collection are prominent Indian women activists (Flavia Agnes, Vibhuti Patel, Bakula Ghaswala) and researchers from the disciplines of the social sciences and humanities (Suma Chitnis, Kalindi Muzumdar, Meera Kosambi). The first hand involvement of the Canadian participants in contesting gender based violation makes for the tone of earnestness that pervades most of their papers.

The volume is segmented into discussions on concepts of vio-

*Head, Department of English, Dr. B.M.N. College of Home Science, 338 Rafi Ahmed Kidwai Road, Matunga, Mumbai-400 019.

lence; an overview of different forms of violence; violence against the marginalised in society; and the role of the state machinery and the police. There is, unhappily, a general disillusionment with the legal and police systems which are seen as using their institutionalized power to perpetuate violence. Flavia Agnes points out that while India may have the highest number of laws on violence against women, these are just 'paper tigers'. There are a number of loopholes to ensure that women do not get justice. For example, a rape case may take upto 10 years and end up only in the humiliation of the rape victim who has to 'prove' in a court of law that 'consent' was withheld.

The last two sections of the book focus on campaigns that have been organized with some amount of success, and experiments with counseling and support systems. There is brief discussion on the role of the Stree Mukti Sanghatan in mitigating violence, and the special cell set up as a joint venture between the Tata Institute of Social Science and the Mumbai police to act as a liaison between women and the police. However, given the demographic location of the seminar, it is only movements in

Gujarat and Maharashtra that are recorded. The Canadian contributors offer interesting case studies of specialized support services in the form of clinical interventions and 'healing psychotherapy'.

Save for a few complex essays such as Kalindi Mazumdar's analysis of the patriarchal structure, and Jean D'Cunha's discussion of the dilemma of the activist who is caught between condemning prostitution as a trade or supporting the sex worker in her demand for better treatment, most of the papers do not veer towards original theoretical analyses. All the same, the text serves as an important handbook for those just entering into the area of gender studies.

SAURASHTRA UNIVERSITY

Applications in the prescribed forms are invited from the eligible candidates for the following posts:

- 1 ASSOCIATE PROFESSOR (Pay Scale Rs 12000-420-18300) (READER)
BIOSCIENCE-I, SOCIOLOGY-I, COMMERCE-I, LIBRARY OF INFORMATION SCIENCES-I (S.T-Second attempt)
- 2 ASSISTANT PROFESSOR (Pay Scale Rs 8000-275-13500) (Lecturer)

Electronics-I, Gujarati-I, Sanskrit-I, Computer Sc -1, Academic Staff College-I, Sociology-I (S T Second attempt)

Application forms can be had from the Registrar, Saurashtra University, University Campus, University Road, Rajkot-360 005 on sending a self addressed stamped envelope (worth Rs 10/-) of 30 x 20 cms size with a crossed Indian Postal Order of Rs. 50/- in favour of Registrar, Saurashtra University, Rajkot

Application duly filled in ELEVEN COPIES should reach this office on or before 12.12.1998 alongwith A/C PAYEE Demand Draft of Rs. 100/- (NON REFUNDABLE) for each of the posts in favour of Registrar, Saurashtra University, Rajkot.

V.H. Joshi
REGISTRAR

COMMUNICATION

MBA Project Work

Project work (PW) is an important and integral part of MBA and other Management Programs. PW is the best way to put the concepts and theoretical knowledge into practice by adopting them to real life management problems and issues confronting business organizations. Every year several thousands of project works are identified and carried out by students undergoing MBA programs. The quality of project work carried out has to be significantly improved to add learning value and utility to organizations which support the PW. Evaluations of Project work over a period have reflected lack of systematic and scientific approach in developing and carrying out project work. Interest and motivation of the guide are also grossly lacking. Great deal of money, time and efforts of Business(B) Schools, students and organizations (where the project is carried out) are expended on PW, but the outcome is of insignificant value. A recent study reveals that most of the faculty guides of the B-Schools and also organizational guides (the executives of organizations in which the PW is undertaken), require specific skills in identifying appropriate areas for research, formulating hypothesis and also knowledge on quantitative methods and techniques. These are essential aspects to effectively guide the students for successful completion of the project and to enhance the practical utility of project work. Currently, the project work is carried on in a routine and casual manner with no commitment and seriousness. Most often, some topics are taken in a hurry, some organizations are selected and somehow the project work is completed and the reports are well bound for creating

good impressions!. The project topic and work lack relevance and value. The purpose for which Project work is built into the MBA curriculum is getting eroded. Most organizations express their reluctance in entertaining Project work since they seldom see value in such work!

The student, the faculty guide, the organizational guide are the important players in development of Project work. They must play their role effectively. The faculty guide must undergo an intensive training and orientation in research methodology to ensure better quality Project work. He must be in a position to identify topics that have current relevance, academic value and benefit to the organization supporting the Project work.

AICTE, UGC, universities and schools offering management programs must consider Project work as an important aspect of manage-

ment programs and arrange for training the faculty guides periodically and closely monitor this aspect. Even the evaluation of Project work is carried in a casual manner by B-Schools and management institutions. Just a few hours before the project viva voce the copy of the project work is handed over to the external examiner. The examiner is expected to review the project work and examine the validity of the hypothesis and the findings! Further, in an AICTE approved management institute, over sixty project works of MBA are passed through the viva-voce examination in a single day by a panel of three examiners! The entire operation has become a mere ritual! The case of students undergoing MBA through the Distance Learning Program (DLP) is even more critical in this area. It is time that AICTE, UGC, Management Dept. of universities, B-Schools reconsider the importance of Project work and take remedial actions early.

H.K. Lakshman Rao
Director, TIME Academy,
"Anugraha"
33, Krishnapuri, RA. Puram,
Chennai-600 028

 **ENGINEERING COLLEGE, KOTA**
(An Autonomous Institution of Govt. of Rajasthan)
Rawatbhata Road, Kota (Raj.)-324010
Date : 6/11/98
Advertisement No. F(5)2/4/98/
Application are invited on the prescribed form for the following posts :

S. No.	Name of Department	Vacant Post as per Roster		
		Professor	Reader	Lecturer
1.	ELECTRICAL ENGG.	-	-	1 (ST)
2.	ELECTRONICS & COMM. ENGG.	-	2 (Gen)	1 (Gen)
3.	COMPUTER ENGG.	1 (Gen)	3 (Gen)	-
4.	ELECTRONIC INST. & CONTROL ENGG.	1 (Gen)	3 (Gen)	1 (Gen)
5.	CIVIL ENGG.	-	1 (Gen)	1 (SC)
6.	MECHANICAL ENGG.	-	2 (SC-1, OBC-1)	-
7.	PHYSICS	1 (Gen)	-	-
8.	MATHEMATICS	1 (Gen)	-	-
9.	CHEMISTRY	-	1 (Gen)	-
10.	ENGLISH & HUMANITIES	-	1 (Gen)	-

Details of qualification & specialization required of vacancy and other terms and conditions may be obtained from the College office on any working days between 08:00 A.M. to 02:00 P.M. by sending an IPO of Rs. 25/- (Rs. 12.50 for SC/ST candidates) payable to Registrar, Engineering College Kota, alongwith self addressed envelope of 11"x5" size bearing stamps of Rs. 3/- thereon. For the posts reserved for SC/ST, General category candidates may also apply and may be considered in case candidates from SC/ST category are not found suitable. Those who have applied earlier need also apply again. Application should reached the Registrar, Engineering College Kota, by 10/12/98.

REGISTRAR

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities

AGRICULTURAL AND VETERINARY SCIENCES

Agriculture

1. Shamsh, Tarique. **Interrelationship between metric characters of lentil (Ag.) (Les culinaria, medik).** Department of Agriculture, Birsia Agricultural University, Ranchi.

2. Vishvanath, Garad Bharat. **Studies on blossom biology and related aspects of grape (vitis vinifera L) cultivars.** (Dr U T Desai), Department of Biology, Mahatma Phule Krishi Vidyapeeth, Rahuri.

Agronomy

1 Jayant Kumar. **Characterization of soil humic substances and meeting plant nutrient needs through waste recycling.** Department of Agronomy, Birsia Agricultural University, Ranchi.

2. Rajeev Kumar. **Forms of aluminium and lime requirement of cultivated and forest soils of Ranchi.** Department of Agronomy, Birsia Agricultural University, Ranchi.

3 Shanthaveerabhadraiah, S.M. **Studies on the complementary relationship between sorghum (Sorghum bicolor (L.) Moench and soyabean glycine max (L.) merrill) in the intercropping systems.** (Dr B R Patil), Department of Agronomy, Mahatma Phule Krishi Vidyapeeth, Rahuri

4. Wadood, Abdul. **Modelling crop weather and nitrogen interaction in upland rice.** Department of Agronomy, Birsia Agricultural University, Ranchi.

Animal Biochemistry

1 Priyadarshini, Subhadra V N. **Purification and characterization of buffalo lysozyme.** (Dr V K Kansal), Department of Animal Biochemistry, National Dairy Research Institute, Karnal

2. Tiwari, Atul. **Comparative studies of cow and buffalo lactoferrins on biosynthesis of immunoproteins.** (Dr H K Tandon), Department of Animal Biochemistry, National Dairy Research Institute, Karnal.

Animal Genetics and Breeding

1. Ganai, Gulam Mohammad. **Studies on DNA polymorphisms in goats using molecular markers.** (Dr B R Yadav), Department of Animal Genetics and Breeding, National Dairy Research Institute, Karnal.

2. Kumar, Subodh. **Effect of platelet activating factor on the in vitro fertilizing ability of cattle and buffalo spermatozoa.** Department of Animal Genetics and Breeding, National Dairy Research Institute, Karnal.

3. Viswanathan, R.S. **The comparative performance of goats under different management systems.** (Dr S Sanmugasundaram), Tamil Nadu Veterinary and Animal Sciences University, Chennai.

Animal Microbiology

1. Kumar, Neeraj. **Studies on the production of bacteriocin from lactobacillus acidophilus.** (Dr D N Gandhi), Department of Animal Microbiology, National Dairy Research Institute, Karnal.

Animal Nutrition

1. Das, Madan Mohan. **Effect of chemical treatment of mustard cake on glucosinolate, rumen degradability and liver functions in goats.** (Dr K K Singhal), Department of Animal Nutrition, National Dairy Research Institute, Karnal.

2. Rao, Somu Bala Nageswara. **Evaluation of bentonite and activated charcoal as aflatoxin detoxicants in dairy goats.** (Dr R C Chopra), Department of Animal Nutrition, National Dairy Research Institute, Karnal.

Animal Physiology

1. Bag, Sadhan. **Studies on work performance indices based on some physiological parameters during carting in bullocks.** (Dr R C Upadhyay), Department of Animal Physiology, National Dairy Research Institute, Karnal

Cytogenetics and Plant Breeding

1. Sawalaram, Ghorapade Dilip Singh. **Inheritance of resistance to charcoal rot (*Macrophomina phaseolina* (Tassi) gold in sorghum (*Sorghum bicolor* (L.) moench).** (Dr D R Bapat), Department of Cytogenetics and Plant Breeding, Mahatma Phule Krishi Vidyapeeth, Rahuri.

Dairy Microbiology

1 John, M Salome. **Studies on the incorporation of bifidobacteria and lactobacillus acidophilus into Dahi.** (Dr Rameshwar Singh), Department of Dairy Microbiology, National Dairy Research Institute, Karnal.

Dairy Technology

1 Khamru, Kaushik. **Development of technology for concentrated and dried whey-based fruit juice mixes.** (Dr G S Rajorhia), Department of Dairy Technology, National Dairy Research Institute, Karnal.

2 Sabikhi, Latha. **Biotechnological studies on the enhancement of probiotic attributes through bifidobacterium bifidum in edam cheese.** (Dr B N Mathur), Department of Dairy Technology, National Dairy Research Institute, Karnal.

Horticulture

1. Jha, Keshaw Kumar. **Effect of nitrogen, phosphorus, potassium and PGR on growth, yield, quality and processing of cape gooseberry (*Physalis peruviana* linn).** Department of Horticulture, Birsia Agricultural University, Ranchi.

Pathology

1. Balasubramaniam, G.A. **Study of cyclopoazonic acid toxicity in Japanese quails *coturnix* (*coturnix japonica*).** (Dr V Titus George), Department of Pathology, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

2 Rao, G V Sudhakar. **Studies on sterigmatocystin toxicity in poultry.** (Dr V Titus George), Department of Pathology, Tamil Nadu Veterinary and Animal Sciences University, Chennai.

3. Singh, Doomar. **Characterization of a virus causing yellow mosaic mottle disease on marigold (*Tagetes erecta* L.).** (Dr S

Q.A Naqvi), Department of Agricultural Plant Pathology, Aligarh Muslim University, Aligarh.

Soil Science

1 Jha, Sudhir Kumar. Characterization of farm and city waste manures and their effect on biological productivity of acid alfisols. Department of Soil Science, Birsia Agricultural University, Ranchi

2 Singh, Ravinder Preparation of P enriched farmyard manure with rock phosphate and its evaluation in wheat maize cropping sequence. (Dr C M Sharma), Department of Soil Science, Himachal Pradesh Krish Vishvavidyalaya, Palampur

Vegetable Crops

1. Dogra, Balbir Singh. Studies on heterosis and inheritance of resistance to fruitfly in cucumber (*Cucumis sativus* L.). (Dr K B Rastogi), Department of Vegetable Crops, Dr Yashwant Singh Parmar University of Horticultural and Forestry, Solan

BIOLOGICAL SCIENCES

Botany

1 Maheshwari, N Leela. Mutagenic and tissue culture studies in *Sesamum indicum* L. (Dr J K Bhalla), Department of Botany, Osmania University, Hyderabad

2 Narmada, K. Morphological studies in some amaranthaceae. (Dr S Raja Shanmukha Rao), Department of Botany, Osmania University, Hyderabad

3 Victor, G R. Experimental studies on seed germination stem cuttings and air layers in some tree species. (Dr K Nataraj), Department of Botany, Karnatak University, Dharwad

Immunology

1 Pashine, Achal Mukundrao. Studies on the factors involved in T-helper responses to *Salmonella typhimurium* antigens. (Dr Vineeta Bal and Prof Satyajit Rath), National Institute of Immunology, Jawaharlal Nehru University, New Delhi

Life Sciences

1. Lynn, Andrew Michael. Techykinin receptor ligand interactions : A stereodynamic investigation. (Prof Rameshwar Singh), School of Life Sciences, Jawaharlal Nehru University, New Delhi.

Microbiology

1 Willayat, Malik Mehboob. Studies on *bacillus cereus* enterotoxins and their pathogenesis. Department of Microbiology, Birsia Agricultural University, Ranchi

Molecular Biology

1 Krishna, T Murari. Studies on cell surface antigens of a rat histiocytic cell line : Molecular cloning and characterization of a tumor specific antigen. (Prof Ashok Khar), Centre for Cellular and Molecular Biology, Jawaharlal Nehru University, New Delhi.

2 Raghavan, Arvind. Characterization of the initiating transcription complex in *escherichia coli*. (Dr Dipankar Chatterji), Centre for Cellular and Molecular Biology, Jawaharlal Nehru University, New Delhi.

3. Sachdev, Sanjay. Molecular analysis of BKM associated DNA sequences in *drosophila*. (Dr Lalji Singh), Centre for Cellular and Molecular Biology, Jawaharlal Nehru University, New Delhi.

Zoology

1. Hanikrishnar M. Population characteristics fishery and post larval distribution of *macrobrachium rosenbergii* (DE MAM) and M Idella (Hilgendorf) of Venababad lake. (Dr B Madhusoodana Kurup), School of Industrial Fisheries, Cochin University of Science and Technology, Kochi.

2 Khalid, Monowar Alam. Studies on coastal zone fishery resource potential using remote sensing and geographical information system techniques. (Prof A K Jafri), Department of Zoology, Aligarh Muslim University, Aligarh.

3 Rizvi, Anjum Nasreen. Some studies on the nematode parasites of insects. (Prof Durdana S Jairajpuri), Aligarh Muslim University, Aligarh

4 Srilakshmi, P. Ecotoxicology of an intertidal gastropod, *turbo intercostalis* exposed to cadmium. (Dr Y Prabhakara Rao), Department of Zoology, Andhra University, Waltair

EARTH SYSTEM SCIENCES

Environmental Science

1 Dhar, Suman Kumar. Studies on replication and maintenance of the ribosomal DNA circle of *entamoeba histolytica*. (Dr Sudha Bhattacharya), School of Environmental Sciences, Jawaharlal Nehru University, New Delhi

2 Pratap, Kamaleshwar Environmental and geo-resources assessment in a part of Son Valley, India using remote sensing and GIS techniques. (Dr Saumitra Mukherjee), School of Environmental Sciences, Jawaharlal Nehru University, New Delhi.

3 Singh, Braj Bihari. Kinetics of sulphur di-oxide oxidation in aqueous phase catalysed by atmospheric aerosols. (Dr V K Jain), School of Environmental Sciences, Jawaharlal Nehru University, New Delhi

4 Yousuf, Rehana. Sorption studies on the removal of inorganic species from industrial wastes. (Prof Mohammad Ajmal), Department of Chemistry, Aligarh Muslim University, Aligarh

Geology

1 Dattatraya, Kulkarni Mohan. Hydrogeological studies of Hosurhalla basin Belgaum district Karnataka. (Dr S C Puranik), Department of Geology, Karnatak University, Dharwad.

2 Sreekantha Raju, V. Mineralogy, phase relations, REE-geochemistry, remote sensing and tectonics of the sulphide ore deposits from parts of the North East Cuddapah basin, India. (Prof K Kameswara Rao), Department of Geology, Andhra University, Waltair.

Oceanography

1. Rasheed K. Studies on the dredging impact assessment (DIA) at Cochin : A tropical harbour. (Dr A N Balchand), Department of Physical Oceanography Cochin University of Science and Technology, Kochi.

ENGINEERING SCIENCES

Chemical Engineering

1. Reddy, T Bhaskara. Kinetics of Menschutkin reaction between aqueous trimethylamine and 2-chloroethanol to choline chloride. (Prof M Bhagwanth Rao and Prof S Venkateshwar), Department of Chemical Engineering, Osmania University, Hyderabad.

Civil Engineering

1. Krishna, K V. Biomechanical studies on human tendinous and ligamentous graft substitutes for arthroscopy guided anterior cruciate ligament reconstruction. (Dr D Shantaram and Dr J V S Vidyasagar), Department of Civil Engineering, Osmania University, Hyderabad.

Computer Science

1. Girija Kumari S. Journal productivity in fishery science : An informatic analysis. (Dr C V Rajan Pillai), Department of Computer Science, Cochin University of Science and Technology, Kochi.

2. Singh, Paramjit. GB-based computational grammar for punjabi : A machine translation perspective. (Prof G V Singh), School of Computer and System Sciences, Jawaharlal Nehru University, New Delhi.

Electronics Engineering

1. Abbasi, Zia Ahmad. Discrete coded wave forms for signal processing in Radar. (Prof Farid Ghanu), Department of Electronics Engineering, Aligarh Muslim University, Aligarh

Mechanical Engineering

1. Mehdi, Syed Nawazish. Performance evaluation of the vertical axis wind turbine rotors. (Dr D N Reddy), Department of Mechanical Engineering, Osmania University, Hyderabad.

MATHEMATICAL SCIENCES

Mathematics

1. Thirwanu, Deepa. Bi level and multiobjective programming in non convex domain. Department of Mathematics, University of Delhi, New Delhi.

Statistics

- 1 Vanu, K. Contributions to distribution and density function estimation for exchangeable sequences of random variables. (Dr M Sudhakara Rao), Department of Statistics, Osmania University, Hyderabad.

MEDICAL SCIENCES

- 1 Jatana, Manu. Sero diagnosis of invasive aspergillosis in experimental animals. Department of Medical Education, Post-graduate Institute of Medical Education and Research, Chandigarh.

- 2 Majumder, Shubh Nath. Modulation of gut T-lymphocytes by HSP of V Cholerae, O1 and non O1 strains — an experimental study. Department of Bio-Technology, Postgraduate Institute of Medical Education and Research, Chandigarh.

3. Prabhakar T. Spectroscopic studies of charge transfer complexes of twin site donors. (Prof P Ellaiah), Department of Pharmaceutical Sciences, Andhra University, Waltair.

4. Sriram, Krishnan. Studies of biochemical mechanisms underlying neurotoxin induced damage. (Dr Vijayalakshmi Ravindranath), Department of Neurochemistry, National Institute of Mental Health and Neuro Sciences, Bangalore.

- 5 Subodh Kumar. Immunological studies of species specific and serogroup specific antigen genes of vibrio cholerae O139 reacting with IgA antibodies in the sera of cholera patients. Department of Immunology, Postgraduate Institute of Medical Education and Research, Chandigarh.

6. Swaminathan, G Jawahar. Crystallographic studies on an antibacterial protein of immune origin from tasar silkworm.

(Dr Dinkar M Salunkhe), Department of Immunology, Jawaharlal Nehru University, New Delhi.

PHYSICAL SCIENCES

Biochemistry

1. Ali, Vahab. Structural characterization and immunological studies of lipophosphoglycan of leishmania donovani. (Dr Mashuat Ullah Siddiqui), Department of Biochemistry, Aligarh Muslim University, Aligarh.

2. Khan, Farah. Structure and transport functions of various populations of renal proximal tubules during development and maturation. (Dr A N K Yusufi), Department of Biochemistry, Aligarh Muslim University, Aligarh.

3. Parvin, Shank Gowhara. A re-evaluation of intestinal conversion of B-carotene to vitamin A. (Dr B Sivakumar), Department of Biochemistry, Osmania University, Hyderabad.

Chemistry

1. Badami, Shrinivappa. Investigation of natural products for antifertility activity. Department of Chemistry, Gulbarga University, Gulbarga.

2. Damayanthi, Yalamati. Biotransformations in the synthesis of some biologically active compounds. (Dr Ahmed Kamal), Department of Chemistry, Osmania University, Hyderabad.

- 3 Dey Debasish. Synthesis and spectroscopic investigation of organotin complexes of MN and NO donor ligands and A new synthetic approach to organotin perchlorates. Department of Chemistry, Rani Durgavati Vishwavidyalaya, Jabalpur

- 4 Malik, Mushtaq Ahmad. Studies on intermolecular interactions in biochemical systems. (Prof Nurul Islam), Department of Chemistry, Aligarh Muslim University, Aligarh.

5. Reddy, K Venkat. Chromones as synthons in heterocyclic chemistry : Synthesis of several heterocyclic compounds of physiological interest. (Prof A V Subba Rao), Department of Chemistry, Osmania University, Hyderabad

Physics

1. Afzal, S M. Isotope shift studies in ultraviolet spectra of neutral and singly ionized neodymium gadolinium dysprosium and ytterbium. (Dr Ratumullah Khan), Department of Physics, Aligarh Muslim University, Aligarh

2. Anjaneyulu, P. Studies on F-region dynamics using HF doppler radar at Waltair (Dip. 20 N). (Dr B Madhusudana Rao), Department of Physics, Andhra University, Waltair.

3. Jana, Debnarayan. Numerical and field theoretic studies in low dimensional condensed matter physics. (Prof Joseph Samuel), Department of Physical Sciences, Jawaharlal Nehru University, New Delhi.

4. Lamba, Subhalakshmi. Transport and magnetic properties of correlated electron systems. (Prof Deepak Kumar), School of Physical Sciences, Jawaharlal Nehru University, New Delhi.

5. Patel, Nand Lal. Theoretical studies on the emission of fast electrons produced during cleavage of alkali-halide crystals. (Dr B P Chandra), Department of Physics, Rani Durgavati Vishwavidyalaya, Jabalpur.

6. Vasanth Kumar, N. The study of TLD characteristics of gadolinium doped alkali halides. (Dr K Narasimha Reddy), Department of Physics, Osmania University, Hyderabad.



PUNJAB AGRICULTURAL UNIVERSITY LUDHIANA

ADMISSION NOTICE 1998-99

Applications on the prescribed forms are invited for admission to Ph D programme in the following disciplines for the Academic Session 1998-99

COLLEGE OF AGRICULTURE

Agronomy, Extension Education, Entomology, Food Technology, Pomology, Vegetable Crops, Plant Breeding, Plant Pathology, Soil Science, Agricultural Meteorology.

Overall Credit Point Average of 5.50 (out of 10.00) or equivalent at the Bachelor's level

COLLEGE OF BASIC SCIENCES & HUMANITIES

Botany, Chemistry, Biochemistry, Agril Economics, Sociology, Genetics, Statistics, Microbiology, Zoology, Business Administration, Physics, Fisheries.

2 FOR INSERVICE CANDIDATES

An Overall Credit Point Average of 6.50 (out of 10.00) or equivalent at the Master's level and an Overall Credit Point Average of 5.50 (out of 10.00) or equivalent at the Bachelor's level.

Inservice candidate shall be an employee of PAU or Punjab Govt or Union Territory of Chandigarh having at least five years experience of teaching/research/extension, out of which at least three years should be after obtaining Master's degree on the last date of receipt of applications

COLLEGE OF VET. SCIENCE

Veterinary Anatomy & Histology, Veterinary Microbiology, Animal Reproduction Gynaecology and Obstetrics, Veterinary Surgery & Radiology, Veterinary Clinical Medicine and Veterinary Epidemiology and Preventive Medicine, Veterinary Pharmacology and Toxicology, Veterinary Parasitology, Veterinary Pathology, Veterinary Physiology, Veterinary Public Health, Animal Breeding and Genetics, Livestock Production and Management, Animal Nutrition

COLLEGE OF HOME SCIENCE

Food & Nutrition, Family Resource Management, Home Science Extension Education, Clothing & Textiles, Human Development

PROSPECTUS & APPLICATION FORMS

Complete details about the admission procedure, reservation of seats, system of education, availability of stipsends/fellowships/scholarships etc are given in the prospectus, obtainable from the Additional Director of Extension Education (Communication Centre), Punjab Agricultural University, Ludhiana either by sending bank demand draft for Rs. 100/- drawn in his favour and payable at any scheduled bank at Ludhiana or personally from 9.30 a.m to 4.30 p.m. on all working days on payment of Rs. 80/- in cash at the counter. Prospectus and application forms will be sent under postal certificate. The University, however, does not bear any responsibility for postal delay or loss in transit

LAST DATE FOR RECEIPT OF APPLICATIONS : 07.12.1998

Application forms complete in all respects should reach in the office of the Registrar, Punjab Agricultural University, Ludhiana on or before 07.12.98. The candidates should attach attested copies of all certificates with their application forms. Incomplete applications or the applications received after 07.12.98 shall not be entertained.

INTERVIEW

Interview will be held on the dates, time and venue mentioned below

Subject	Date	Time	Venue
Agronomy, Extension Education, Entomology, Food Technology, Pomology, Vegetable Crops, Plant Breeding, Plant Pathology, Soil Science, Agricultural Meteorology.	21.12.98	9.30 a.m.	Pal Auditorium, College of Agriculture, PAU
Botany, Chemistry, Biochemistry, Agril Economics, Sociology, Genetics, Statistics, Microbiology, Zoology, Business Administration, Physics, Fisheries.	22.12.98	9.30 a.m.	-do-
College of Home Science (all subjects)	23.12.98	9.30 a.m.	-do-
College of Veterinary Science (all subjects)	23.12.98	11.30 a.m.	-do-
College of Agricultural Engineering (all subjects)	23.12.98	3.00 p.m.	-do-

NOTE

- No separate interview letter will be sent.
- No T.A./D.A. is admissible.
- Interview date will remain unchanged even if holiday is declared by the Govt/University on any of the above dates

Any clarification regarding admissions can be obtained telephonically from the Assistant Registrar (Academic)-Telephone No. 0161-401969 Extension-286.

**A. Venu Prasad, I.A.S.
REGISTRAR**

CLASSIFIED ADVERTISEMENTS

UNIVERSITY OF MUMBAI

Applications are invited in the prescribed form for the post of Professor (who will also be designated as Director) on the Establishment of Alkesh Dinesh Mody Institute of Investment Studies in the University.

The pay-scales of the post of Professor is as under

Professor : 4500-150-5700-200-7300

In addition to pay, Dearness Allowance, House Rent Allowance, Compensatory Local Allowance will be paid according to the University rules. The post will carry the retirement benefits according to the existing rules of the University. Teachers of the University are permitted to take up outside work according to the University rules. The appointment to the post will be made on probation for a period of two years.

The minimum qualifications prescribed for the post is as under

Professor :

An eminent scholar with published work of high quality actively engaged in research with ten years of experience in post-graduate teaching and/or research at the University/National level institutions, including experience of guiding research at doctoral level

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

The additional qualification prescribed for the post are as under

- 1 Preferably a Ph.D. in Economics or Financial Management
2. Master's Degree in Management with Finance specialisation or Masters Degree in Commerce
3. Exposure to Industry, Financial Institutions or Primary and Secondary Markets of Stocks Exchange desirable

Nine copies of applications in prescribed form, together with attested copies of certificates alongwith a crossed Demand Draft of the prescribed fee, in favour of The Registrar, University of Mumbai, should be sent in an envelope superscribed with "Application for the post of _____" so as to reach the Registrar, University of Mumbai (T A U Room No 134), Fort, Mumbai-400 032, on or before 27th November, 1998. Candidates from abroad, Andaman and Nicobar Islands and Lakshadweep may send their applications so as to reach the Registrar on or before 15th December, 1998. Candidates who are already employed shall send their applications through proper channel. Applications received after the last date fixed for the receipt of applications will not be accepted. The University shall not be responsible for any postal delay. Incomplete applications and applications on plain paper will not be considered. Canvassing direct or indirect will be a disqualification.

Prescribed forms of applications can be had free of charge, from the Teaching Appointments

Unit, Registrar's Office (Room No 134), University of Mumbai, Fort, Mumbai-400 032. Request for supply of a set of nine prescribed forms by post should be made sufficiently in advance with a self-addressed stamped (Rs 10.00) envelope of the size 27 x 12 cms.

Candidates having knowledge of Marathi will be preferred.

Mumbai-400 032, Dr. P.V. Pradhan
6th October, 1998 REGISTRAR

requisition letter.

R.F. Nirankatti
REGISTRAR

MAHARSHI DAYANAND SARASWATI UNIVERSITY AJMER

No.F.1 () Estt/MDSU/98/ Dated 9.11.98
Advertisement No. 7/98

Applications are invited for undermentioned posts so as to reach this office on or before Monday the 30th November, 1998 in the prescribed form obtainable from the cash counter of the office of the Registrar, Maharshi Dayanand Saraswati University, Ajmer on pre-payment of Rs 25.00 in cash. If required by registered post, crossed Indian Postal Orders/ crossed Demand Draft of Rs. 40.00 in favour of Registrar, Maharshi Dayanand Saraswati University, Ajmer should be sent. In such cases the envelope may be addressed to Dr Ravindra Bharti, Offg. Dy. Registrar, Estt. Section, Maharshi Dayanand Saraswati University, Ajmer and the same must reach him upto Friday the 20th November, 1998 positively, failing which the application form will not be sent.

A. Professor : (Scale of pay Rs 4500-150-5700-200-7300) Management Studies (1 UR)

B. Associate Professor : (Scale of pay Rs 3700-125-4950-150-5700) Botany (1 UR), Economics (1 UR).

C. Assistant Professor : (Scale of pay Rs. 2200-75-2800-100-4000) Microbiology (1 UR)

D. Additional Registrar : 1 (UR) (Scale of pay Rs. 10650-325-15850)

E. Assistant Librarian : 1 (UR) (Scale of pay Rs 2200-75-2800-100-4000)

*UR means Unreserved Category

Notes : (1) The details of qualifications etc will be available with the application form. (2) The University reserves the right to consider person in absentia for the post of Professor (only) even though one has not applied. (3) Application received on plain paper or after expiry of last date or incomplete or without supporting documents will be rejected without making any reference. (4) Retired persons need not apply (5) Candidates, if called for interview will bear their own expenses. (6) The application for the above posts are as per UGC/AICTE norms as applicable. Relaxation in eligibility with regards to NET and/or SLLET for lectureship will be as per UGC guidelines. (7) Applicants already in employment should send their applications through proper channel. However they may send an advance copy but they will have to produce "No Objection Certificate" from the employer before they are interviewed. (8) The university reserves the right to fill or not to fill up the post(s) or to call any suitable candidates for interview. (9) The number of post likely to be filled may be increased or decreased. (10) Earlier applications are not considerable against this advertisement.

REGISTRAR



**SWAMI RAMANAND TEERTH
MARATHWADA UNIVERSITY
NANDED**

स्वामी रामानन्द तीर्थ
माराठवाडा विश्वविद्यालय, नांदेड

**"DNYANTEEERTH", GAUTAMI NAGAR,
VISHNUPURI, NANDED-431 602.**

Applications are invited for the following teaching posts in the Campus Schools :

PROFESSORS (1 POST)

School of Life Sciences-1

LECTURER (1 POST)

School of Earth Sciences-1 (ST)

NOTE : Reserved post shown above is being advertised for the Fifth time.

01. The minimum qualifications prescribed & specialisation essential —

a) PROFESSOR : Applicants shall hold Doctoral Degree in the relevant subject, be known for their scholarly eminence with published work of high quality, be actively engaged in research with 10 years of experience of post graduate teaching/or research in University/National level institution, including experience of guiding research at Doctoral level. **Specialisation in any one of the branches is essential — Biotechnology/Molecular Biology/Genetic Engineering/Plant Tissue Culture.**

b) LECTURER : Applicants shall possess good academic record with atleast 55% marks or equivalent grade at Master's Degree in relevant subject. Candidates besides fulfilling the above qualifications should have cleared the National/State Eligibility Test for Lecturers conducted by UGC/CSIR. SET test accredited by the UGC alone will be accepted. Relaxation from the requirement of minimum 55% marks, at Masters Degree level is not permissible in any case. **Candidates having specialisation in Ground Water Geology alone will be considered.**

02. Above posts carry U.G.C. recommended pay scales — pre-revised for the time being.

03. Candidates belonging to reserved categories must produce Caste Certificate issued by the competent authority of the State Govt. and validated by the concerned authorities.

04. In case suitable candidates of specified reserved category are not available, the posts will be filled by

appointing other suitable candidates on temporary basis till the end of the 1998-99 academic year.

05. For reserved posts candidates belonging to Backward Classes as notified by the Govt. of Maharashtra will alone be considered.

06. Conditions may be relaxed in case of highly qualified and competent candidates.

07. Prescribed application form (a set of ten copies) can be had from the University Office in person on cash payment of Rs. 200/- or by post on submission of a crossed D.D. for Rs. 200/- drawn in favour of the Registrar, Swami Ramanand Teerth Marathwada University, Nanded, together with a self addressed cloth bound envelope (25 cm x 18 cm) bearing postage stamp worth Rs. 25/-. Application forms will be sent under certificate of posting. Blank application forms will be available for sale from 9th November to 15th December '98.

08. Application forms complete in all respects will be received in the Office on all the working days either by hand or by post from 10th November to 20th December '98.

09. No application shall be entertained if it is incomplete/received after the last date/not forwarded through proper channel.

10. The interview of candidates found eligible will be preceded by Exposition/Colloquium.

11. The University will not be responsible for any postal lapses or delay.

12. The Selection Committee reserves the right to select highly qualified candidates, in absentia, for Professor's post.

13. Candidates will have to attend interview at their own cost.

14. The University shall not be held responsible for postponement or cancellation of scheduled interviews for any unforeseen/unavoidable reasons.

"Dnyanteerth",
Gautami Nagar,
Vishnupuri,
Nanded-431 602

Advt No. : TP-2/98
Date : 2nd November 1998.

Dr. T.R. Sontakke
REGISTRAR



THE UNITED STATES EDUCATIONAL FOUNDATION IN INDIA (USEFI)

SEEKS EXECUTIVE DIRECTOR

Applications are invited from American and Indian citizens for the position of Executive Director of the United States Educational Foundation in India (USEFI), a non-profit, binational commission responsible for administering the "Fulbright Academic Exchange Program" in India, and providing Educational Advising services for higher education in the U.S. Candidates should have 5-10 years of administrative experience in higher education or related fields, plus extensive familiarity with both American and Indian universities.

ESSENTIAL QUALIFICATIONS :

- Demonstrated understanding of Indian/South Asian Society and educational systems,
- Background in academic administration, as a program director, department head and/or dean, teaching and/or overseas research (experience in academic counseling helpful),
- Demonstrated ability and experience in financial planning, budget, team-based management, administration and considerable university development officer/fundraising skills,
- Strong oral, written and inter-personal communications skills,
- Experience in the field of academic exchange (knowledge of or experience with U.S. Government programs an advantage),
- Familiarity with modern information systems (Internet, e-mail), facility with MSWord and spreadsheet applications an advantage,
- Ability to develop and manage a comprehensive program of support from corporations and foundations including prospect identification cultivation, solicitation and stewardship, and
- Ability to represent USEFI to the corporate and foundation community through personal contacts and by accompanying U.S. Government officials on visits

The responsibilities of the Executive Director include, but are not limited to, the overall administration on the New Delhi headquarters and three regional offices located in Mumbai, Calcutta and Chennai. Extensive travel within India and occasionally abroad is required. Total staff at all four locations is approximately thirty-five. Applicants must demonstrate effectiveness when interacting with American and Indian academics, government officials and business leaders. Applicants must be able to give direction in implementing an international exchange program compatible with the changing needs of both countries, ensuring that USEFI fulfills the purposes of the binational agreement and the policy guidelines of the J. William Fulbright Foreign Scholarship Board. Job functions are divided equally between administration, public relations and fundraising.

A two-year renewable contract will be offered to the successful candidate beginning May/June 1999. Salary will be commensurate with experience and is negotiable. A letter of application accompanied by a CV should be received at one of the addresses below by the **January 15, 1999** application closing date. Three letters of recommendation should also be sent directly by the recommending persons to the same address as the letter of application. Only applications received by January 15, 1999 will be considered.

Dr. John Sedlins

Senior Program Officer,
Near East/South Asian
Academic Exchange Programs
U.S. INFORMATION AGENCY
301 4th St., S.W., E/AEN, Rm 212. Washington, D.C. 20547

OR

The Chairman
USEFI Board and
The Cultural Counselor
American Center
24, Kasturba Gandhi Marg,
New Delhi-110 001 (INDIA)

Information about the Fulbright Program can be obtained at <http://www.usia.gov/education/leburus.htm>